

AVIATION WEEK

DEC. 8, 1947

INCORPORATING AVIATION AND AVIATION NEWS

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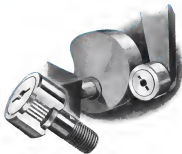
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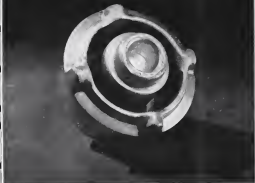
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AVIATION WEEK, December 8, 1947



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THE AVIATION WEEK

SECURITY VS. BUDGET—Congress' power of the purse was never more dramatically—and safely—illustrated than in the statement before the Air Policy Commission of Secretary of Air Syngman and Vice Chief of Air Force Staff Vandenberg. Obviously, a number of interpretations can be put on a statement that was at starting in its very essence as it was in context. Not the least important interpretation is that the duties of security are much more the desire for greater appropriations, and security first.

Perhaps nothing so well supports the nature of the Syngman Vandenberg statement as the comment of a member of the Washington staff of *Associated Press*: "It [the statement] far exceeds anything previously put out on the subject and in fact appears to me to be a security violation of a very genuine nature. If we had asked for that stage we would have been given a severe lecture on security."

PREMEDITATED BREAK—In assessing the strengthening break with traditional military policy, it might be well to consider that the size and composition of our Air Force was elected from Syngman and Vandenberg with little promise.

Both were prepared with the figures already typed on a separate sheet of paper. Syngman's aide later took pains to see that those at the press table covering the hearing had the figures correct.

In addition, W. Stuart Symington is not one to be easily deceived by questioners. He gave because he wanted to give.

The reason is not difficult to determine. It is the conclusion that must have been reached by Air Force leaders that at this moment the need for greater appropriations from Congress be outweighed by any other consideration. Thus, to reduce a philosophical store bomb, set up a chain of mental reactions among those observing the workings of the military mind over a long period of time.

NO WOLF CRY—Probably permanent of those societies is the sobering realization that this time there can be no belittling of an Air Force drive for funds. Appeals (promoted or unopposed) for funds by every government agency are to be expected every year about this time—shortly before the opening of Congressional budget hearings. It has been sort of a game for years. Every government official has cried "well" so often it is customary automatically to discount the appeals.

But the Syngman Vandenberg statement cannot be discounted, as it stands the most carefully guarded information in the Air Force's war chest. Those are little more they could tell about the Air Force as a military arm.

For perhaps the first time it is possible to turn the tables on the Air Force leaders and leveling the wall

standing finger, tells the world as often as their own lips. "You have used a potential enemy's view of intelligence work."

AID TO THE PUBLIC—However, a politician's approach would do nothing of the sort. For what the disclosure before the Policy Commission has done is for the first time to bring the American public—the taxpayers—up to date on the state of its Air Force. Stripped of generalities and bombastically glowing promises, the statement laid it on the line. The effect should be salutary.

It should be an effect, moreover, that was carefully calculated in advance. More and more there seems to be a pattern in government officials' statements before the Policy Commission. Gen. Spaatz' assessment of Russian armor was part of it. So, too, was acting Secretary of State Lovett's call for a larger Air Force.

The pattern, which can only be credited to the new candor inherent in Air Force public relations, seems to be to give the public all the facts, confident that it will require the correct decisions from Congress.

RUSSIAN ANGLE—However, that may be an entirely too charitable reading of Air Force motives. It is just as possible that the Syngman Vandenberg disclosure points to an exactly opposite view of the public's interest. The compelling reason for divulging the information may have been possession by the Air Force of facts about Russian armaments which the USAF is unwilling to give the public.

Acceptance of this view would lead to the belief that the information regarding our own situation was primarily directed at Russia, with the American public being the gas, in the blunder who caught the fuel tip.

An air force, like any other military force, obviously is an arm of a country's international policy. Gen. Vandenberg stated that the Air Force's strength was based on an estimate by the State Department of the international situation for the next few years. It is significant that Gen. Spaatz, in assessing our Russian situation for the Policy Commission, estimated five years as our maximum period of security if Russia continued its present foreign policy.

In weighing Spaatz' statement that Russia has as many as 14,000 planes in active service, qualified authorities pause to consider what type they are. Russian employment of machines in World War II was distinguished by a disregard of the concept of strategic air operations. U. S. Air Force perceptions with the fact that Russia has deployed the B-29 would indicate that Russian ideas on military aviation have changed.

Therein may be the key to the Air Force case for funds which reached us one of the most amazing public statements in recent Washington memory.

DOMESTIC

President Truman officially named John R. Allison as Assistant Secretary of Commerce for Air by signing his appointment to the Senate, now in session.

California Cessna Air Engines, Van Nuys, Calif., has been denied a CAA letter of registration permitting them to sell surplus aircraft at an aircraft show at Long Beach.

Capital Airlines (PCA) will inaugurate service to Toledo, Ohio on Jan. 7, 1945.

Willis Air Service, Tintonia, N. J., has been denied a CAA certificate authorizing flight service between the U. S. and Puerto Rico under the carrier's letter of registration as an unlicensed air-cargo line.

John Goodrich was appointed system public relations manager for Lockheed Aircraft Corp. He was an editor at *Newman* and AUP pilot during the war.

FINANCE

Grumman Aircraft Engineering Corp. declared a dividend of \$1.50 per share common stock payable Dec. 24. This matches a previous dividend paid August 21, bringing the year's total to \$3.00. This is in comparison with \$2.00 total distributed last year.

National Aviation Co. declared a 12 1/2 cent dividend, making a total of 25 cents declared this year, in comparison with \$1 1/4 last year.

Bell Aircraft Corp. reports a \$31,163 loss for the first nine months of the year, after giving effect to a tax carry back refund of \$945,900. The \$1,705,167 operating loss was sustained on sales of \$18,645,701 and a total income of \$18,956,619. President Lawrence D. Bell attributes the loss to heavy development costs on helicopter models.

Boeing Aircraft, Inc. reports net loss of \$72,748 for the third quarter in total income of \$3,991,261. The company with a \$111,385 profit revenue of \$3,148,731 for the same period last year.

FOREIGN

Norwegian Airlines (DNL) has ordered a new four-engine Sunderland Mark VI from West Wight Shipbuilders, Ltd., England, for delivery next spring.

General Counsel of Winnipeg has been elected president of the Air Industries and Transport Association of Canada.

British South American Airways flew its first Transatlantic flight last week from London at an average speed of 310 mph.

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Vol. 47 No. 23

AVIATION WEEK

Dec. 3, 1947

INCORPORATING AVIATION AND AVIATION NEWS

Air Force Seeks 12,441 Planes For Adequate U. S. Defense Force

Want 131 groups including 70 groups of regulars;
3,200 annual plane production rate; funds to add 5,295
planes to reserves and storage pool.

First detailed breakdown of Air Force requirements for what it considers an adequate air defense of the United States was given to the President's Air Policy Commission last week by Air Force Secretary W. Stuart Symington and Gen. Hoyt S. Vandenberg, Air Force vice chief of staff.

Program will require 131 air groups with a total of 12,441 planes of which 6,808 will be first line combat planes in the regular Air Force backed by a reserve of 5,633 National Guard planes, 2,565 planes in organized air reserve units and 2,538 in storage. Annual production rate of 3,200 military planes with average weight of 46,414,000 lb. is necessary to maintain the regular Air Force. Annual inventory of 1,600 planes from the regular is reserve composition is planned. At present only 2,801 of the types required for the 3,200 reserve are available necessitating purchase of 5,295 planes in addition to the 3,700 annual production rate.

► **To Last 15 Months:** Gen. Vandenberg pointed out that the Air Force was on a State Department estimate of the international situation for the next five years and not designed sufficient to fight the first 10 months of any future war. Vandenberg said that the Air Force plan outlined that week here for the acquisition of the aircraft industry to match wartime airplane rates and by the government for whatever expansion of the air force that was deemed necessary to win the war.

► **Secure Schedule:** Secretary Symington told the policy group that it was foolish to talk of a subsidy for the aircraft manufacturing industry when the Air Force numerous representatives assured the industry's estimates of the amount of business necessary to keep it on a healthy condition. He asserted that the industry, representatives confirmed where would keep the aircraft industry as a

production when its production facilities could easily be expanded to meet wartime demands. Symington also warned that it was foolish to expect that a peacetime economy could support an aircraft industry anywhere near its wartime peak and that the bankruptcy of some aircraft manufacturing was inevitable.

Backbone of the air program is the 70 group regular Air Force of 6,808 planes. Current Air Force strength is about 40

► **Long Range Recon:**—Two long-range bombers in long range reconnaissance planes are the Republic XB-12 and the Hughes XF-11. Republic has an order for 20 photo versions of the F-12. Hughes plans to develop one and place eight units at Miami, AL though the Air Force is not anxious to give the XF-11 any publicity after Hughes' testimony on the "Wright Field State Hughes Club" before a Senate investigating committee, reports coming out of the desert test center indicate the XF-11 is performing unsatisfactorily.

► **First Light Bomber Groups:** (240 planes) are planned. With recent changes in Air Force classification these groups can include planes carrying range and bomb load of various heavy bombers. Replacements for the Douglas A-26, an air group, will come from the multi-engine bombers recently flown by North American (B-45), Convair (B-46), and Boeing (B-47). The Martin XB-48 appears to be out of the production picture. Only light bomber production contract awarded so far has been awarded North American to build 100 B-47s.

► **Fighter Strength:**—Fighter strength will come to 22 normal fighter groups plus three all-weather fighter groups and four tactical reconnaissance groups (about 2,175 planes). Tactical reconnaissance groups consist of fighters specially equipped with cameras for low level photo work. Republic's P-59 is the only new jet fighter now in production as a Lockheed P-56 replacement but an entirely new model of jet and jet powered fighters is in the experimental stage with McDonnell, Lockheed, Republic, and Convair all working actively in the design competition. (Astoria News, July 21) North American will get a production order for its P-56 long-range, tactical jet fighter. Two all-weather fighter types are still in the experimental stage — Curtiss-Wright's XP-87 and Northrop's XP-90.

► **Two major carrier groups** are scheduled (about 350 planes). Fairchild C-52s are currently standard transport equipment. A greatly modified version of the C-42—the C-119A—also built by Fairchild is scheduled as the P-51's replacement. Future of transport aircraft will depend on how the role of paratrooper units in the current evolution of ground force tactics.

► **Special Squadron—Reconnaissance of the**



fully named groups and is expected to be 55 groups by Jan. 1. Strategic striking force will be 21 very heavy bomber groups aided by five very long range reconnaissance groups (150 planes).

Bomb groups will contain 630 long range bombers designed to provide an operational striking force of 598 planes. Strategic Air Command's striking force is now about 150 planes but 230 additional B-29s are now being transferred from strategic to active groups. Boeing B-37s of the Strategic Air Force are scheduled for replacement by Boeing B-49s and Convair B-36s as far as procurement funds and production schedules can provide for them. Boeing has an order for 170 B-50s. Convair's B-56 contract calls for 100 planes with an expected delivery date in the fall.

plans will be devoted to 22 special operations including rescue, search, intelligence, rescue, rescue, and, plus the Air Transport and Training Commands. Only approximately now scheduled for ATC's C-97 C-54 operations are being C-97. Rescheduling of which are already completed. Transport Command is drawing up specifications for a new type transport that will more closely approximate tactical planes and allow students to perform primary, secondary and bombing.

As National Guard's 5,212 planes will be distributed among 27 groups of which 18 have already been activated. Only 1,984 of the required planes are currently available from Air Force inventory.

► **Reserve Program**—Air Reserve calls for 14 groups and 2,168 planes of which only 1,218 planes are available. These planes now in use are mostly standard transport rather than the tactical types required by an effective reserve program.

Gen. Vandenberg told that group that the Air Force would need a substantially increased appropriation to reach strength of 10 groups. Although Air Force strength will reach 17 groups by Jan. 1, Vandenberg said it would decline to 40 groups by next fall if current appropriations rates were maintained due to rising cost of aircraft and supplies.

Aircraft Shipments Up 23% for September

Aircraft manufacturing industry delivered 564 million worth of completed aircraft and spare parts during September, according to a joint publication of the Bureau of the Census and the Civil Aeronautics Administration. Of this total \$60.9 million was aircraft and parts and 53 million was other products in military inventory of surplus aircraft. These shipments were up 23 percent over the previous month.

Military deliveries accounted for \$17.5 million, 65 percent of the total. These comprised 133 military aircraft, up 23 percent in August. Companies working on U. S. military contracts reported to make deliveries worth \$24.6 million in the next six months.

► **Flight Traffic**—Aircraft engine shipments were up 23 percent in September with deliveries totaling \$36.6 million. Of this total, \$22.7 million, or about 62 percent, went to U. S. military customers. Military aircraft engine shipments scheduled for the next six months amounted to \$147.5 million.

► **Exports Rise**—Exports of aircraft increased 38 percent over August with a total of 185 complete aircraft being shipped. About 65 percent of the value of these aircraft was for new foreign-engineered transport planes.

PRODUCTION PROGRESS REPORT

| Month | 2-Place | 3-4-Place | Trans- | Trans- | Total | Value* |
|-----------|---------|-----------|--------|--------|-------|----------|
| Jan | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| Feb | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| Mar | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| Apr | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| May | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| Jun | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| Jul | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| Aug | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |
| September | 1,414 | 101 | 213 | 1,614 | 1,000 | \$17,100 |

* Includes aircraft parts, accessories, and other products and all payments to military contractors during this period. Table based on "Data for Industry" of the Bureau of the Census.
** Revised figure

Personal Aircraft Companies Reporting to Aeronautics Industries Association

| Company | Jan-Oct | Oct | Sept | Jan-Oct | Oct | Sept |
|----------------|---------|-----|------|-------------|----------|-----------|
| Aeromex | 1,414 | 101 | 213 | \$1,614,000 | \$16,000 | \$17,100 |
| All American | 1,414 | 101 | 213 | 1,614,000 | 1,000 | 1,000 |
| Berry | 1,414 | 101 | 213 | 6,791,000 | 757,000 | 1,396,000 |
| Bellman | 201 | 5 | 5 | 3,205,000 | 40,000 | 48,000 |
| Crescent | 2,111 | 16 | 116 | 5,519,000 | 291,000 | 127,000 |
| Emerson | 715 | 14 | 43 | 2,081,000 | 31,000 | 312,000 |
| Emery | 1,414 | 101 | 213 | 1,170,000 | 1,000 | 12,000 |
| Emerson | 1,414 | 101 | 213 | 1,268,000 | 257,000 | 276,000 |
| North American | 1,414 | 101 | 213 | 1,021,000 | 1,000 | 20,000 |
| Piper | 5,212 | 64 | 127 | 2,421,000 | 191,000 | 267,000 |
| Republic | 715 | 14 | 16 | 1,306,000 | 70,000 | 87,000 |
| Stinson | 1,414 | 24 | 168 | 16,091,000 | 911,000 | 791,000 |
| Twin Engine | 1,414 | 101 | 213 | 908,000 | N/A | 23,000 |
| Van Dusen | 1,414 | 101 | 213 | 6,412,000 | 180,000 | 98,000 |

Total: 14,677, 162, 124, \$48,185,000, \$3,095,000, \$3,981,000
Notes: North American did not include Jan. and Feb. 1947. Aircraft Spares exclude shipments of U. S. to the Air Force which was 113 in Oct. and 125 for the year. Pack and Van Dusen figures are for year through Sept. only.

Electric companies reported shipments of 754 personal aircraft during the month of October according to the AIA Personal Aircraft Council. Of the total 535 were Republic and 179 were three and four-place with a total value of \$2,924,000. These shipments are down 22 percent over the previous month following a combination of aircraft decline and falling oil demand.

In addition to these civilian models, Aeromex delivered a total of 113 model 1,164 two-place liaison models to the Air Force.

Alfred Marchev Dies, Was Republic Head

Alfred I. Marchev, president emeritus who was largely responsible for the outstanding warplane record of Republic Aircraft Corp. of which he was the president, died at his home in Garden City, L. I., at the age of 61. He had been suffering from a heart ailment. At the time of his death, Mr. Mar-

chey was president of Republic Aircraft Products Co., Long Island City, N. Y. He resigned the presidency of Republic in 1947 to become chairman of the board of the company. He resigned that position in May, due to ill health and mental problems. He had been president of Republic since 1941.

Mr. Marchev was born in Zurich, Switzerland and came to the U. S. in 1919. He was an executive of several manufacturing firms before going to Republic in 1941 as assistant to President Ralph Deane. He became Republic president the following year.

Widely known for his advanced production engineering thinking and methods, Mr. Marchev built more than 500 patents for manufacturing processes.

Agreement Announced

An agreement between KLM Air Lines and British European Airways allows for inter-visibility of airline tickets on the Dublin-Moscow-Egypt-Jordan and London-Amsterdam routes. The agreement was announced by KLM.



ILS INSTALLATIONS IN REGULAR USE NOV. 1

Shows estimated surface within the water along coast with accuracy to within 100 feet. ILS, automatic alarm lights and horns disconnected in some towers.

operates with 100-ft. surface and three-quarters of a mile visibility over water. ILS, automatic alarm lights and horns disconnected in some towers.

CAA Personnel Sloppy in ILS Monitoring, ATA Survey Shows

Check of 52 ILS installations reveals flaws in 31; find automatic alarm lights and horns disconnected in some towers.

By ROBERT HOLT

Sharp criticism of Civil Aeronautics Administration personnel charged with maintenance and monitoring of the CAA sponsored, Instrument Landing System was made by the Air Transport Association in a 63-page confidential report to its member airlines. The report also disclosed some operational flaws that require correction at 11 of the 52 ILS installations checked. CAA recently announced its approval of operational use of ILS by 11 airlines at 41 fields in weather below minimums now required for radar range operations.

The bulky ATA report, which varies considerably from a one-page ATA press release on the same subject, was based on a flight and ground check of the 52 domestic ILS installations that have been commissioned by CAA. Flight inspectors were conducted in ATA's D-3 research plane with W. E. Dury Roads and Charles Mc Atee each pil-

oting for half of the survey. CAA technicians checked and calibrated all instruments and ILS receivers in the plane. Numerous CAA personnel were aboard during various parts of the survey.

► **Worst Practices**—Worst condition was pointed by the survey was the practice to permit CAA-operated control towers of disconnecting warning lights and lights that called attention to ILS malfunctions because the lights and lights were not present. These operations were found at both Newark and La Guardia fields—one of the fields handling lowest ceiling traffic—in addition to several other control towers handling substantial traffic. At La Guardia tower, operations were reported too busy to attend to malfunctions of the ILS reported by the monitoring panel in the tower.

Some CAA control tower and com-

munications personnel appeared not to have been sufficiently appraised regarding the importance of the ILS monitoring system, the report noted. "Some communications personnel are not entirely familiar with the functions of the monitor and the present system of monitoring operations of ILS is not always being maintained satisfactorily."

Among the principal criticisms of the monitoring system said are:

- Failure of the system to check glide path position. While variation in location position is shown by the monitor only signal strength at glide path is checked. ATA recommends that until CAA devises a positive check on glide path position airlines should not rely on ILS for actual navigation approach below 200 ft. CAA has indicated that it will not authorize ILS use below 200 ft.
- Failure of the system to provide a check on any one of the seven parts of the ILS system faster than every 60 seconds. As standard approach speeds of between 100 and 120 mph, rate of descent along the glide path is about 400 ft. per minute and 60 seconds on a standardizing glide path would be ample time to cause a fatal accident.

ATA recommended that CAA personnel check the monitoring system, which has a panel in both control tower and communications stations, at least twice a day at a standard, well-scheduled time, delegate certain control tower personnel to be responsible



NEW VIKING VERSION FOR RAF

LONDON—Delivery by Vickers Aircraft of the "Vikings" (above), new military version of the "Viking" to replace the DC-3s now in use by the RAF is expected by 1948. Vikings are more powerful Hercules 220 engines of 2000 hp. each, a large structure does to permit swift vehicles to be loaded into the cabin, and an enlarged cockpit providing a navigator to be carried in addition to pilot, copilot and cabin officer. Main cabin—passenger transport, paratrooper carrier, supply dropper, glider tug, freight and vehicle carrier, hospital plane. As troop transport, the Vikings will carry 36 fully armed soldiers.

operates the Vespberg airport, just outside of The Hague.

Dijksen is already licensed to operate a charter service, and since the war has acquired a fleet of 25 planes of his own, which he operates both inside and out of the Netherlands. The newest ships are superb twin-engine Berckhoff and Comair, which he has converted along American lines, and his oldest, single-engine Fokker Kolffhoven.

The strength program may give Dijksen a substantial amount of capital and he will furnish the plane, both for freight and passenger service, and to refuse to depart, it is hoped, as fast. At the moment Dijksen is not licensed to operate planes larger than the Comair and Berckhoff, and the government is also being petitioned to increase his license limits.

Dijksen, incidentally, is the leading young man (about 35) of Dutch aviation who successfully led a flexible airplane under the nose of the German occupation army. The plane was the rough prototype of the new private four-engine ship the "Pioneer", being produced now by the Fokker plant at Amsterdam.

His report was both welcomed and dominated by the Germans, but Dijksen managed to steal enough materials and equipment from occupied planes to construct his new plane at his house. He used a Ford V-8 engine for power.

Dijksen is very highly regarded in all reputable Netherlands aviation circles and is considered the one man in the

west where it is doing a \$40,000,000 yearly business and is paying dividends to shareholders.

It is building hangars and repair shops at Schiphol (above), of course, to government practices, are at least as good as any of any airport the world over. Headquarters is a large modern office building on the suburban Witteboeck section of The Hague which will house nearly 5,000 employees when completed. Something of an expert in itself, KLM offers a wide variety of special services and benefits for its personnel, including every a KLM symphony orchestra.

The line runs only American planes, and is modernizing its fleet nearly every week with the arrival of new Constellations. A number of DC-3s also are on order. Because of the scarcity of Dutch pilots, more than half of KLM's pilot staff of 250 are from other countries, including 23 Americans.

Airmail Rates Cut

MELBOURNE—Airmail rates from Australia to the Netherlands East Indies, Malaya, North Borneo, Burma, Ceylon, French Indo-China, Hong Kong, India, Siam, China, Formosa and Manchuria have been reduced 30 to 60 percent.



COUNCIL HEAD

Director of Civilian Front (above), managing director of Schiphol Airport, is president of the Council's Administrative Council was announced recently. From, who serves as managing director of the Council, was selected at a Brussels meeting. From of the Council's twelve members are nominated by the Government, eight by private interests. From is elected by the Council, the airline transport development company. He succeeds as council president From Van der, and was elected to the new post while attending the Brussels meeting of the International Air Transport Association, which class has in president of the 1945 IATC general assembly in Brussels.

The growing growth of KLM since the end of the war and its present position state undoubtedly is the main factor which has caused plans to be in its direction. Its planes and its larger and equipment at Schiphol Airport, Amsterdam, dominated almost to the point of ultimatum by the war, KLM has made a comeback to the en-



PASSENGER COMFORT in the new Douglas DC-6 high altitude transport is closely guarded by Kollsman designed and engineered Cabin Pressurization Controls. Years of Kollsman experience in the detecting of small pressure differentials and harnessing them to actuating mechanisms have accounted for much progress in fitting the airplane to public transportation needs.

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ENGINEERING & PRODUCTION

Australian Production At Absolute Minimum

MELBOURNE, Australia—Rate of production in Australian government aircraft plants is being held to the absolute minimum consistent with the necessity of meeting replacement demands in the Royal Australian Air Force and of maintaining a readily accessible nucleus of manufacturing capacity.

Except for the projected replacement of F4U de Vilmory engines in the Vampire fighter by Australia-built Rolls Royce Merlin turbo jets, the RAAF will for years to come rely largely on what is left over from World War II production stockpiles. One thousand three hundred and thirty planes are held in storage to serve as immediate reserves to take care of replacements between July 1945 and June 1952.

Between May, 1944, and October, 1947, only 37 new Lincoln bombers came off the production line, an average of one a month.

Curtis Prototype—Since General Motors' Australian subsidiary called off the Gypsy Major engine production program, no private maker remains in engine production. De Havilland's Siddeley branch plant provides the only shop for civilian plane assembly. Its addition to assembly work on the Vampire fighter jet which the Commonwealth Aircraft Corporation is taking up to produce the West turbo jet, de Havilland is getting the first Australian designed aircraft prototype into shape for assembly.

Designed to replace the Douglas, which has done a good job developing facilities in Australia's "outback," the new craft will be known as the Dwyer and structurally will follow the well-established principle of the de Havilland Dove.

The three Gypsy Major JFs of 140 hp which will power the Dwyer will be imported from England although it was first planned to use up the large stockpile of Gypsy which General Motors built in Australia during the war.

Under Project—A government production plan lay out in the Tudor project is still in its program stage. It is a development project largely linked with design experiments in Great Britain. However, it is unlikely that anything but the early version of the Tudor will go into production in Australia.

Apart from local development and design activities carried on in Australia, foreign blueprints and manufacturing



DOVE ON FLOATS

De Havilland Aircraft's right-plug trainer line has been redesigned by the Canadian affiliate as a float plane in an effort to increase its utility in both operations which constitute the greatest airplane market in the Dominion. Project was moved out to de Havilland plant in Toronto which produced the Buick.

data dominates production. An abrupt halt short of "show-down" is considered by the United Kingdom and the United States.

Imports of American planes and spare parts, and even of production tools, are likely to continue falling behind requirements taken the dollar situation even as considerably. Continued lag in British production has discouraged Australian airlines from placing orders in Great Britain.

Leonard Elected President of PAC

Pacific Automotive Corp. has named W. O. Leonard president to succeed Earl Herring who resigned Nov. 7 for personal reasons. Leonard is a graduate of Cornell University with a degree in Mechanical Engineering. He was President and General Manager of the Wilson Foundry and Machine Corp. from 1935 and he was appointed vice president of PAC, Pacific Division, in July, 1947. Herring is replacing his large financial interest in PAC.

In other personnel actions

Automotive Manufacturing Co. of Detroit named Victor B. Jordan as President of the G. O. Leonard. Jordan was formerly head of the WPPA Aircraft Division. He has been executive vice president of American since August 1, and earlier was the executive vice president.

Automotive Press Manufacturing Co. announced that it had elected W. O. Leonard as its new president. The action comes because Leonard is the president of the company which he held from 1935 to 1946, following 12 years as president of the company. Paul C. Foster will continue as vice president of the company's operations as executive vice president, and general manager. Warren B. Foster was named to be

the newly created post of vice president in charge of industrial and research.

Wheeler, the retired Chief P. H. Hertz, president and director since was formerly executive vice president and general manager of Automotive Corp.

Thompson Chemical Co. appointed Edward (Eddie) H. Hertz as vice president and general manager of the company's Chemical Division. Hertz worked for eight years in the firm of Hertz & Hertz, Philadelphia, as sales and service manager of the chemical division.

Thompson Chemical Co. appointed A. L. Hertz as vice president and general manager of the company's Chemical Division. Hertz worked for eight years in the firm of Hertz & Hertz, Philadelphia, as sales and service manager of the chemical division.

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AVIATION WEEK, December 8, 1947



Tailoff of the first Fairchild C-119 Packtail, a modified C-52A. Compare forward fuselage section and nose with conventional C-52 (below).

New Design Brings Better Packet

More powerful engines, larger cargo space feature C-119 for which Fairchild has \$22,000,000 contract for 37 airplanes.

By ROBERT McILKIN

Award of a production contract for a new and greatly improved Fairchild Packet is tangible proof of the Air Force's extensive plans for the "Flying beam" type aircraft.

Plans are underway quickly for a detachable cargo compartment version, and a tractorless equipped Packet is now undergoing performance tests. The Packet here is believed to have not only in the Air Force but with the General Forces, the Medical Corps and, perhaps, commercial freight carriers as well.

► New Orleans-Latest version of the Packet is the Fairchild C-119 for which the Air Force has just awarded a contract for 37 at a total cost of \$22,000,000. The new Packet is bigger, faster and more powerful than its predecessor, the C-52A, and carries more of the more delicate of the design is revealed by the rigorous development

program to which it has been subjected.

The C-119 is powered by two Pratt & Whitney Wasp Major engines developing 3,270 hp each, replacing the 2,110 hp Double Wings of the C-52. Chief modification is the relocation of the crew compartment forward in the nose affording a considerable improvement in nose over the former position atop the fuselage. This change has also increased the cargo capacity from 2,016 cu ft to 3,895 cu ft by providing an unobstructed cabin 6 ft high, 9 ft wide and 38 ft long.

The 57% additional power has aided more than four tons to the useful load of the Packet and increased its cruising speed from 214 to 231 mph, at 10,000 ft. Redesign of the wing to higher load factors has presented an increase of 10 tons in its maximum useful load weight, less than two tons of which went into empty weight leaving four

tons for additional fuel and installed equipment. About 75% additional load may be carried over the same range by the C-119 as compared to the C-52A.

► Losses of Experience—Numerous detail design features are incorporated on the C-119 that were determined from the rigorous service tests of the C-52A. A major new feature is the installation of a paratroop drop door forward in the fuselage floor, leaving the tail doors free to handle heavy equipment.

These clam-shell doors have also been improved through the addition of a bottom clam-shell portion, permitting close access from the cabin without the possibility of the doors open into the slipstream at their complete removal, as is done on the present C-52A. Radar equipment has been moved from the forward portion of the cabin to the aft door compartment, clearing additional space for cargo.

Fairchild Packet

| | C-119B | C-52A |
|-----------------------------|-------------|-------------|
| Two P&W | Two P&W | Two P&W |
| R-4660-39 | R-3800-55 | R-3800-55 |
| Takeoff Power | 3,270 hp | 2,110 hp |
| Span | 146 ft 6 in | 166 ft 6 in |
| Length | 85 ft 10 in | 77 ft 1 in |
| Height | 26 ft 7 in | 26 ft 4 in |
| Fuselage Length | 66 ft 1 in | 55 ft 3 in |
| Cargo Capacity | 3,895 cu ft | 2,016 cu ft |
| Empty Weight | 34,144 lbs | 32,350 lbs |
| Max. Takeoff Weight | 74,000 lbs | 66,000 lbs |
| Payload—500 in | 31,750 lbs | 17,500 lbs |
| Cruising Speed at 10,000 ft | 231 mph | 214 mph |



Standard C-52A Packet, totally distinguished from the C-119 (above) by the redesigned nose. Other points of difference are shown in box at right.

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Movement of the flight deck forward 10 ft increased the length only five feet—two of which went into lengthened tail booms and three into the nose. By adding the tail boom length over the engine nacelle, the same coverage and tail boom assembly can be used on both C-32A and C-119.

The new engines required extensive redesigns of the power plant section and location of the oil cooler in housing directly behind the loading gear on the bottom of the nacelle permitted a thorough clean-up of the engine cooling air. Carburetors and intercoolers are now taken in through openings in the gear loading edge inboard of the engine, the various drag-producing scoops of the C-52A nacelle having been completely eliminated.

► Post-Pile: The new Pallet, which flew for the first time during the second week in November with Dick Hervey at the controls, is designed to C-119s and actually is a modified production C-119A in accordance with a supplement to the original contract. A standard C-119A fuselage was extended forward and the wing center section is the same. These modifications were made to improve the configuration for actual delivery of the product. The C-119B, which will feature a fuselage 14 in. wider and a center wing section the same additional width to close the new high activity square rated "paddle-point" engine.

Production plans for the C-119B have been developed by production chief William L. "Bill" Lowrey in full compliance with industrial partnership plans agreed to with Fordell president J. Carlton Ward, Jr. and initial stabilization planning expert.

► **Production Plans:** These plans started with the initial design at the airplane by Armand J. Thielert, Aircraft Division Chief Engineer and Mike Conolly, C-119 Project Engineer. By designing schematics and blueprints for possible high-volume production, the resources like the basic components,

The constant, excessive use of a circular pair of trolleys on which an assembly jockey can wheel. As it progresses around the trucks, two members, each with installed and checked-out external equipment, are added until the entire piece is hoisted from the truck and rolled onto the line. London explains that by simply adding people to the miniature assembly line, each truck is able to handle any given order in a period of hours.

Backing up this fast assembly operation are similar low- and high-volume systems designed around automatic in-line assemblies, whereby multiple

Warner's experience revealed that a two-man sorting team produced about 140 nests per acre, whereas the well-known Tex. antbird center consistently produces 12,000 nested jaegers per day by the same two men (in winter).

► **Strength Added**—Redesign of the C-119 wing increased its strength from the C-82A load factor of 2.60 to 3.65, which was accomplished by increasing the use of spar caps, wing skin panels and lower surface corrugations. The new wing uses 75% as much heavily loaded skin, and magnesium in the leading edge as well as nonstress ribs (2).

Many of the detailed improvements introduced for incorporation on the C119H have already been integrated into the C12A production line and the current model is a vast improvement over the prototype, design work on which began during 1968 when Hughes identified an actual booster and began adding wings and a tail to it. The (then) Army Air Force approved the mock-up and layout drawings the following year and the prototype was completed in less than 20 months, tested Run 6, 12,000ft taking it aloft for the first time on Sept 10, 1969.

Production on a contract for 100 jet under way early in 1945 and the first aircraft rolled from the line in May. Originally ordered as a prototype transport, the C-82 contract was increased to 200 in June, 1945 and subsequently North American Aviation awarded a contract to build 700 at its Dallas plant, the first competitive bid contract awarded since Ford Harbor.

Production To Date—Fairchild's Hagerston, Md. plant delivered new aircraft during 1943 and North American had completed 3 C-119N when the contract was awarded following V-J Day. Fairchild continued its production at a rate scheduled to 8-man, completing 70 last year and 85 to date this year. The contract for 200 is scheduled for completion June 1948 at which time the line will have been converted to C-119R production.

Members of the CNM have gone directly to the 9th Air Force Troop Carrier Command. Six Packets have been assigned to the Air Transport Command for airdrop rescue work, and every helicopter and special emergency equipment. The Hagerstrom plant recently completed special communications modifications to 74 Packets for assignment to "Operation Yellow," a four-month exercise in the Arctic to test operational problems in frigid temperatures.

Many of these modifications were developed at the Air Force's new climate hangar at Eglin Field. The Chiefly, these changes require discussion at

plastic, synthetic rubber products, etc. and automatic changes in power plant electrical and hydraulic equipment. Warnings and bells were painted a loud loud red to aid recognition in the new sound-a-fused landing be made.

The **Track-Following** exhaust tests on a converted Douglas A 30 built at Wright field and at Dayton-Wright by Packard engineers, special ball-type bearing gear has been developed for the Packard and is now undergoing tests.

The gear consists a wide rubber belt revolving around main and idler, which to provide additional bearing area for the aircraft on rough, soggy or sandy fields. The gear is fully retractable into a special housing and can be retracted.

the plasticizer and engine fluids and is expected to enable the craft to operate from any cleared field of suitable area regardless of weather or surface conditions.

At Fort, Army Ground Force and the Army Medical Corps are developing special lightweight versions of most standard combat equipment to permit use in defense by the PzKw, and Gen Jacob L. Devere, AGF chief and one of the most enthusiastic PzKw proponents, believes that one of the new infantry divisions, about 17,000 men with accompanying equipment and supplies can be air delivered in 700 PzKw

► **Detachable Landing Model-A** new version of the Packet, the "Pack Plus," is undergoing development. Already established as a passenger aircraft by Air Materiel Command at Wright Field, the new craft is essentially a standard Packet with a detachable fuselage. Crew compartment is mounted

stop the wing and a special landing gear are mounted in each fuselage pod to support for tiltrotor after delivery of the container.

All branches of the Army are enthusiastic about this language capsule configuration, which would completely eliminate ground loading time and permit the air delivery of munitions, for example, and an immediate fix of an aircraft container base or a loaded container.

Thatched-roof hanger Charles J. Roggs believes the Pocket (at left) configuration for commercial use brought him. It can operate at less than 5 cents per ton-mile up to 200 mi and can carry a 3-ton load for 1000 mi for 8¢ per ton-mile. Only commercial and test to date was a joint Post Office Dept.-United Air Lines coast-to-coast operation in December 1946, when 5¢ airmail was introduced. A special Pocket was equipped as a flying mail car and clocked record mail to India.

The Fuschl Pocket fit snug and nicely appears clearly defined for an epic career at its specialty: the pairing best-sellable of each career.



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In other critical applications, too—in exhaust stacks, collector rings, venturi cowls and fire walls—where Stainless Steel is the only material that has proved entirely satisfactory, U-S-S Stainless 18-8 offers unsurpassed service. It creates high creep strength at elevated temperatures. It produces no harmful oxidation scale. It provides superior

resistance to corrosion, wear and distortion.

U-S-S Stainless Steel will also outperform other materials in structural parts and control surfaces. Adhesive stress—resists, discolors and stabilizes. Friction—resists delamination and wing spars—can be built very light yet very strong, with U-S-S Stainless. Its high corrosion resistance eliminates the need for protective coating . . . no aluminum need be

made for weakness in corrosion . . . full strength will be maintained indefinitely. Speedy fabrication by spot welding—20 to 100 times faster than riveting—lowers assembly costs. U-S-S Stainless Steel, a perfect, service-tested steel, is produced in the industry's most complete range of sizes, forms and finishes. Our engineers are specialists in its use. They'll be glad to cooperate with you in its most effective application.

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United States Steel Corporation, Warren, Erie, West Chester
U.S. Steel Works, Lake Erie, Youngstown, New York



UNITED STATES STEEL

Flight Engineer Trainer Saves Expense

A net saving in training time amounting to 20-40% has been achieved by Lockheed Aircraft Service, Inc. in training flight engineers for operation on the Constellation. Usually 50 to 100 hours of actual flight time are required to train a flight engineer. However, with the use of a specially designed flight engineer's trainer, the time and cost of the training has been materially reduced, depending on the previous experience of students.

The flight engineer's trainer, designed and built in the special device shop at Lockheed's Burbank base, closely duplicates all of the functions of the Constellation flight engineer's panel in flight. The device provides the same training for the engineer as is provided for pilots by the Link trainer, and is believed to be the first such trainer to use electrically operated instruments from an engine. All of the actual flight conditions except motion can be simulated.

A loud speaker, synchronized with engine controls, produces the sounds of engines, lighting effects duplicate day and night aspects of flying.

Familiarization of the student with every instrument on the panel, and the sound of the engine is especially emphasized in the course of training, in addition to theories in emergency procedure which normally could not be conducted without jeopardizing the safety of the engine.

Two courses of instruction are offered by Lockheed's training department. Experienced flight engineers with training in aircraft other than the Constellation require six weeks intensive training during which time they become completely familiar with planes other than their own. Twelve weeks of instruction are required for inexperienced flight engineers. Claims are made to eight persons whenever possible so that the instructor can give closer attention to the individual.

Lockheed provides first ground training for one flight engineer with the purchase of each Constellation. Charges for the training of additional flight engineers have been established at approximately \$1.30 per hour, this charge including Lockheed Aircraft Service only the cost of conducting such training. To date this organization has trained 215 flight engineers for such Constellation operators as TWA, Eastern Air Lines, American Overseas Airlines, KLM, British Overseas Airways, Air France, Air Route Transport, Linea Aeropostal Venezolana, Quatar Empire Airways and Pan American Grace Airways.



Engine control gauges and electrical controls of the trainer (above); Irving S. Larson (below) checking cylinder head temperature and operating fuel flow controls.



French Postwar Designs In Production

Industry's present plan is to equip the home and Empires; then concentrate on exporting aircraft to world market.



By MICHAEL MARSH
(McGraw Hill World News)

PARIS—French aircraft output has been lagging this year and exports of new planes have been negligible, but plans are continuing to produce a variety of prototypes. With these plans the French industry hopes first to equip units at home and in the French empire, and then by the end of 1948 to begin making its weight felt in world markets.

Apart from interim plans exhibited five weeks ago at the government-sponsored competition, here are the latest prototypes of the most interesting designs.

• The Nord company is still working on its "Nord" (N 1500) two-engine all-metal hydroplane, exhibited at the Paris Air Show last winter, but which has not yet flown. Twenty-five of these craft have been ordered by the French Navy for reconnaissance and life saving work. Cruising speed is stated at 135 mph with two General Motors 11R engines of 5200 (1000) hp. at takeoff and loaded weight of 16-13 metric tons, wingspan is 33.5 ft., length 70 ft., height of fuselage 11.8 ft. and wing area 1075 sq. ft. Six 20-mm machine guns are to be carried, and a crew of seven.

Nord has also developed a smaller aircraft carrier torpedo bomber for the Navy governed by the same two engines. The all-metal "Nordica" (N 1500), which had its first flight August 25, The double-dihedral wings are folded in a special hydraulic mechanism which is taken down upward toward the rear, giving, it is claimed, the least resistance in the wind both during and after fielding. The forward landing wheels retract into the engine nacelles.

Carrying a crew of two, and 1.2 tons of fuel for a loaded weight of 10.8 tons, the "Nordica" has a theoretical top speed of 335 mph, cruising speed at 250 mph, landing speed of 90 mph, landing rate of 550 ft. and takeoff rate of 500 ft. Wingspan is 34 ft., length 46 ft., height 21.2 ft., and wing area 993 sq. ft. At the rear of the wing is the landing gear in a glassed cockpit which, together with a periscope sight above the fuselage, gives the radio operator-machine gunner ample visibility for sighting the rear controls-control not shown here. Two other fixed machine guns are fixed in the wings.

• The Nord N 2100, which had its first flight at the end of April, is a two motor rear prop all metal transport with square fuselage and high wing placed half way back from the nose. Chief advantages of the rear prop and wing arrangement are stated to be eliminating drag on passengers in case of propeller accidents and easier maintenance, as well as full range of vision for the eight passengers. Powered by two Fiat SDR engines of 425 hp. each, the



Interior and exterior views of the Nord 1500.



Front view of the Nord 1500 on display at a French showing.

Truarc Beveled Ring takes up end-play, eliminates shims, saves 20 minutes' assembly time



TACHOMETER GENERATOR—Katharine Instrument Division, the Space & Company—showing Waltes Truarc Beveled Retaining Ring.

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- Saves 20 minutes' assembly time.
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When installed in a groove with a corresponding bevel, the tapered edge of the Beveled ring acts like a wedge and rigidly bridges end-play. End-play can also be taken up positively by another type Truarc ring—the Beveled.

Wherever you use machined shoulders, nuts, bolts, snap rings, cotter pins—there's a Truarc ring that does a better job of holding parts together. All Truarc rings are precision engineered, easy to assemble and disassemble, always available to give a screw-driving grip. They can be used over and over again.

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Side view of the SC 6300 prior to takeoff



The N 2180 shown with gear down, ready to land

N 2180 has a cruising speed of 200 mph, takeoff run of 2840 ft., and gas consumption of about 40 gal. an hour. Wingspan is 58.5 ft., length 66 ft., height 12.5 ft., and wing area 410 sq. ft. The second model will be built with forward wings.

Need is also building a two-place jet plane, to be powered by two R.R. Devco engines, which should be finished by the end of the year and is known as N 1600. It has begun construction for the Navy of a second jet with folding wings, for carrier use. And, finally, it has nearly finished building of a two-place helicopter (N-1700) with 35 ft. rotor, to be powered by a Marlin 350 hp engine.

• The Sed-Orient company is beginning a series of 45 of its 10-passenger SC-10R, which it claims is the fastest (130 mph maximum) two-engine commercial plane available. Powered by two Centaur-Racco 148 engines with 1200 total takeoff hp., the aircraft plane has a wing span of 54 ft., length of 68 ft., height of 19.5 ft., and wing area of 842 sq. ft. The cabin features area lighting, full soundproofing, bar, etc. • Among other Sed-Orient prototypes, the jet SC-6100, built for a year, has still had no speed tests, though it has been aloft powered by a General Jucos-004 jet engine. A second lightjet plane, the SC-M1, is being readied by Sed-Orient. This unit, with wing-back wings, is designed primarily for autonomous research and will be flown both as glider and with motor. Wing span is 30 ft., and length is slightly less 29 ft., with wing area of 181 sq. ft.

A small transport, the SC-2101, will have its test flight soon. This transport plane, powered by two 150-hp Marlin engines in tandem, has a cabin which can be removed from the fuselage and replaced by a different cabin with chord fittings if it is desired to change the type of service. The cabin has two doors, two on each side, opening inward for a corridor and allowing the seats to stretch all the way across the plane. The SC-2101 has a wing span of 48 ft., length of 34 ft., wing area of 355 sq. ft., and theoretical cruising speed of 186 mph.

• The Centre company has nearly finished the prototype of its four-engine "Centron" (NC-211), designed to carry 15 tons of cargo for over 600 miles. It also has been testing a bi-motor torpedo bomber, the NC-1050. • The Sed-Orient company, but of the four autonomous transports, has recently begun construction of a jet plane, the SC-1400, about which no details are yet available. This company is producing lander houses (in long-range SC-2010 transport at which transport has been ordered by Air France (Aviation News, Jan. 13, 1947). The prototype of the craft should be completed by year's end, and others in the series have already been begun. Sed-Orient is also building the second of its giant (bi-engine) hydroplanes, the SC-200 (Aviation News, Jan. 47), though no action has yet been received.

Among the private companies, Alkars (Alkars) Louis Regard is working on a four motor 35-ton hydroplane and a bi-motor cargo plane capable of carrying 18 tons at flight. Edouard Louis Forge has also designed a cargo glider for 1.5 tons of freight. Known as the CM-40, this

glider prototype has recently been finished under contract by the Nord company. Most of the private firms, however, concentrate on bi-motor planes.

Volume output in the French industry during the spring and summer will undoubtedly follow the level of 193 planes a month averaged last year, due largely to strikes and summer holidays. More recently increased output, of the new models at least, is reported. Nord is now producing one a day of its Nord-alpha four-seater, and in soon as the new Regard motor for its four-place Nordron is officially approved it expects to start producing up to five a day of the latter plane. Centre is continuing to push the sales of its NC-902 transport, of which 560 have as far been built, largely for the French Army, but for which orders have also been received from Poland, North Africa and Sweden.

Volume production is only beginning, also, on the wide variety of "bi-motorized" products which are to be manufactured by French aircraft makers. Most plants are looking between 15 and 25% of the resources to date program, which was launched officially about a year ago and is designed to hold up military working force and equipment for after aviation production. Some plants, however, have involved over completely. The aircraft engine factory at Verber, for example, is making no other aircraft engines.

• Sed-Orient is just starting to turn out its aluminum-panelled hydroplane, called "Vigilant". Centre has made no other bi-motor transport. Output of autonomous bi-motor, hydroplane, etc. has also been small to date, but it



The Nord 2180 in flight



Ground photo of the Nord E 110. (X2 photo World News)

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is expected to report six months will be and volume production.

Legislation of the House of Representatives is now drawing up plans for a 140-hour program, the 36-hour, to be completed by night 3600 hp engine placed in tandem.

After building the first engine, however, a five and a half ton flying pilot model is being constructed to test the planned construction features of the larger plane. This model will have a wing span of 70.5 ft., length of 34 ft., and height of 15.7 ft. It will be powered by four single 200 hp engines. Construction of the model is already under way at Sud-Est's water-side plant of Morsman, on the Rive de Brest, a large artificial lake near Morlaix.

With the fifth Laté 631 (average displacement at 71.5 tons loaded weight) now being built at Sud-Est's water-side St. Nazaire plant, this new development indicates the continuing French interest in hydroplanes for transoceanic flight. Sud-Est has also built a hydroplane about the same size as the Laté, the SE 200.

Possibilities for these craft were discussed at the French Aviation Congress last Spring.

In the export field, trade has been received except with exports plans largely American, and disposal of practically all is being. For example, in the first seven months of this year total French exports of transit planes amounted to five craft shipped in Belgium at a total price of \$2500, and in the month ended January 110 planes shipped the Canada for \$50,000. Last year the 250 craft received and 700 single crafts sold at an average value of \$600.

An official export agency representing all French contractors, public and private, has been set up here. Known as Office Français pour le Commerce de Matériel Aéronautique (OFEMA), this organization has now established agencies in most countries of the world.

Though the general French attitude is to meet foreign and French Export needs first, OFEMA hopes to make itself felt in world markets next year with a plane for every need. As soon as the planes are available for export it means launching a real publicity campaign to make them known.

Prospects are that the two-place Canard biplane, priced at \$12,500 and the three-place Narbonne, priced at \$18,000, and the 50-100 ft. transport, will be available in sufficient quantities to export early next year. Later in 1948 will come the amphibious (bi) version of the two-seater Canard, the giant transport SE 200 and Laté-631, and one of the cargo planes.

There are the principal plans with which OFEMA hopes to win the world market.

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Drop Forging of Turbine Blades Eliminates Machining Operation

Although more expensive than conventional procedures, precision process gives metallurgically superior product with better mechanical properties and close tolerances.

By CARL L. SCHWEIZER,
Superintendent, Turbine Forgings Division,
The Steel Improvement & Forge Co., Cleveland, Ohio

The manufacture of turbine blades and compressor blades by the drop forging process presents problems which should be of considerable interest to metallurgists, design engineers, and purchasing agents.

Probably one of the classic methods of describing these manufacturing problems is to point out the basic differences between blade forging and the more conventional alloy steel aircraft forgings. These basic differences can be generally classified under four headings: (1) Differences in design; (2) Differences in material (both the material used for cast and the material being forged); (3) Differences in tooling; and (4) Differences in heat treating and processing.

► **Differences in design.** Conventional aircraft forgings must conform to the user's design, but it is normally allowed forging tolerances as defined by the Drop Forging Association. These tolerances allow for slight errors in die making, and for normal die wear over a forging production run. They are classified as "Commercial Tolerances" and "Close Tolerances."

An ordinary forging weighing 5 lb. for instance, would carry a commercial thickness tolerance of plus .030 in., minus .010 in., or perhaps a close thickness tolerance of plus .015 in., minus .004 in. In most cases the conventional forging is used as a structural component whose dimensions may vary within the limits of commercial tolerances without causing major difficulty during assembly and without seriously affecting the strength of the assembly. As long as the desired shape and adequate strength are present, then, the conventional forging is usually acceptable.

In comparison, a blade forging weighing 5 lb. frequently carries a thickness tolerance of plus or minus .005 in. Then it itself does not seem so extremely close unless one or two factors are considered. In the first place, the blade forging is not the same type of structural component as the ordinary forging. It is primarily an axial and serves a definite aerodynamic function. Due to the axial design, it is not too practical to machine finish the contour of a

blade, and therefore the ultimate contour and finish of the axial must be defined in the design operation. The requirement plainly places the blade forging as a class by itself insofar as forging tolerances are concerned, and insist most the close tolerances of the Drop Forging Association (see below).

It is the practice at the Steel Improvement & Forge Co. to work out blade tolerance agreements with the user in advance, taking into consideration the design of the blade design involved. These tolerances must not only thickness, but also cover variation from true contour (only a smoothness tolerance), tolerances covering the degree of twist, or bend, and variation on the amount of loss, or deflection (straightness tolerance).

Another design factor which is different in blade forgings as compared to ordinary aircraft forgings is the ratio of blade surface area to blade diameter. The blade forging is much thinner in relation to its projected surface area than an ordinary forging. The faster aerodynamic action, a factor known as "boundary layer" flow, is very important in the design of compressor blades.

► **Differences in Materials.** The steels to which blades are subjected in service require that they be made of the best materials available. Rotating blades in axial flow compressors, for instance, are subject to centrifugal stresses (torsion), vibratory stresses (loading to cause fatigue failure), and bending. Turbine blades are subjected to the same stresses, but must be able to withstand them at elevated temperatures without excessive stretching, or creep.

The practice of turbine blade forging is that the forgings must define the shape given alloy at elevated temperatures, when these alloys have been carefully developed to resist deformation at high temperatures (in service). This is further reason why the forging of blades normally requires better equipment than would be used to produce conventional forgings of the same weight.

It is easy to realize that the forging of these special alloys would cause

concern that were the same die materials employed as for producing ordinary forgings. It is in the practice of forging steel blades, therefore, to use special, high-alloyed die steels which are harder, and less prone to wear. These die steels are from three to four times as expensive as regular die steels. In forging the head and root sections of the blades by the special die steels a certain amount of ductility is sacrificed, with the result that the blade is a much more serious problem in the forging of blades than it is in regular forging work.

► **Tooling.** Differences—"Tooling" in the dimensions will be used rather freely to cover not only tooling as we usually think of it, but also various other types of equipment used in the manufacture of forgings.

Blade forgings require more tooling, more elaborate tooling, and more accuracy in tooling than conventional forgings do. The tooling has to be extremely close. An error of .002 in. at .003 in. is the making of a blade die may very well set up half the forging tolerance because the dies are much like blade design. Templates and master dies, therefore, are made accurately by processes comparable to 10 x or 20 x as best layout drawing. An unskilled operator determined not make the most important tolerances in the design of the die before they are related to the design shop for production.

Inasmuch as precision blade forgings are used in service with the ruggedness of many engine parts, the forgings are set that there be no scale pits, surface irregularities, contamination, or disorientation. This requires the use of special, controlled atmosphere heating furnaces. Automatic electronic recording systems control the forging temperature to within very close limits.

Rooming elevations in the furnace equipment are added to a minimum. This allows the small adjustments for the change in the dimensions of the ultimate forging.

The tooling required for inspection purposes can be grouped into two categories: (1) Layout inspection tools. (2) Production inspection tools. Layout tools do not vary much whether the forging being inspected is a blade or a conventional forging, except for the addition of a profile gauge when inspecting blade forgings. This gauge is used for checking measurements from two to five inches of an axial for contour, bow or deflection, twist, warp or degree of bend, and indicating the shaft in order to find up discrepancies.

Due to the additional duties which fall on the Blade Inspection Department at the Steel Improvement & Forge Co., the Production inspection tooling is

quite desirable. The final surface conditioning of blades is handled by the department so that a continuous inspection can be carried on during these final operations. Therefore, in this department will be found the regular checking and inspection tools such as Magnalux and Ziglo equipment, but in addition such equipment as grinding and polishing wheels, belt sanders, and steel blasting machinery. Incidentally, the polishing grags which play such an important part in layout inspection are used in production inspection for 100 percent checking of aspect.

■ **Handling and Processing**—Differences in handling and processing are experienced from the time the logging stock is cut into multiple lengths until the finished logging is packed for shipment to the customer.

While the logging stick for the ordinary all-steel logging is mostly efficient hot or cold channeled, the logging stick to be used for blades is cut to length as an alternative cut off machine. It might well be mentioned at this point that the m. Made logging has as purchased from the steel supplier must be entirely free from surface defects.

Normal practice is to use only controlled journal material for processing references.

Because of the comparatively thin sections in blades and the non-plastic properties of blade logging materials at logging temperatures, several heatings are required before the blade reaches its final dimensions. During the initial stages of logging it is often possible to strike several blows between heatings, but as the final shape is approached only one (or possibly, two) blows can be struck per heating.

Incumbent surface requirements for blades are so stringent, several roughing and surface conditioning treatments are given the blades during the forging operation. The typical procedure is to stop forging at several semi-finished stages, roughen and etch the blades, grind and/or polish out any surface defects, and then return them to the forge shop for further forging.

In helping the logging giant, can must be cracked not to ovenside at temperature. First through the material's long-forged steel oxidation, some acids are formed at logging temperature and can very easily be harnessed into the

Make surfaces if proper precautions are not taken.

In considering the potential alloy steel aircraft forging through the above steps, the multiple is heated (in most cases the time at temperature being much less critical), placed in the sensitive forging temperature and forged to shape, usually all on one heating.

Heat treating starts with the grade of material being manufactured. Voids diffuse outmost rapidly in blade heat treating in that decarburization, carburization, or soaking are not possible. The closer to mart that the heating atmosphere can be maintained, the more desirable will be the ultimate surface of the blade.

The effect of the additional work, special materials, and careful handling of blades as described herein is to produce a metallurgically and mechanically sound product to very close tolerances.

desired product so that we can obtain these metallurgical and mechanical advantages, he will be confronted with the higher-than-conventionalizing price made necessary by the additional inputs.

British Autopilot Claims More Reliability

A new electric autopilot has been announced by Smith Servo Instruments Ltd, London. Designed as the SEP 1, the device is operated on the rate/steering principle rather than displacement. Smith contend that during the old hydraulic and pneumatic operation of *autopilots* modern developments in electronic techniques has resulted in increased flexibility, increased reliability, and freedom from maintenance.

Heart of the machine is composed of three identical gages which measure the rate of burn respectively along the vertical and two horizontal axes. Separate electric servo motors are employed to control rotation, elevation, and elevation. Each servo is also harnessed through its amplifier channel to the appropriate gage. The gage signals are fed to the amplifier through a junction box containing adjustable potentiometers which transmit a bank of signal proportional to the rate of burn of the sample and provide an accurate means of establishing optimum performance for each type of aircraft.

► **Shallow Caves**—The geologists are determined to search for caves relevant in all guises. The big pitch and roll gas sample pendulums are used to provide gravity indicators; weathering of the middle channel is provided by a remote transmitting compass work as the Rattray Canyon, or any other time capable of driving a small seismometer.

Identical, interchangeable stereo notations are used for raddies, allenes, and raddier control. These notations feature high impact, low inertia, and almost immediate response—features which contribute to high accuracy to the consistency of the system.

Electrically operated switches disconnect servo motor from the control system, ensuring complete safety in the event of power failure since disengagement is automatic and instantaneous.

• **Power Requirements**—System power requirements are (1) a 3-phase AC supply at 115 volts, 60 cycles from an



(1) an AC or capacitor-driven generator maintaining voltage and frequency within ± 5 percent, and (2) a DC supply of approximately 7 amps at 25 volts, for the operation of the control lamps and diodes.

Weight is given as 99 lb. 4 oz. for basic installation which consist of components necessary for simple, uncomplicated wiring.

Comparison of this English test with advanced American designs reveals that the British are several years behind in research development. The Swifts' ratiopole is complicated by the use of three gyms, each containing a single axis, whereas the American device employs a single gym, essentially required to be sensitive to movements of the plane around three axes.

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"Obstruction Beacon" describes the type L-M power unit. Dimensions of this light fixture, weight of unit.

"Runway Rotating Beacon" describes the type L-M power unit. Dimensions of this light fixture, weight of unit.

"The Directed Runway Light" describes the type L-M power unit. Dimensions of this light fixture, weight of unit.

Also available are detailed diagrams and specifications sheets and wiring diagrams for individual equipment and the entire system. Address: L-M Material Company, Airport Lighting Division, 2401 Broadway, New York, N.Y.

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Seen as simplifying creation of an elliptical engineering drawing, an ellipse set No. 431, marketed by **Engineering Inc.**, Box 570, Cambridge, Calif., comprising four 4 1/2 x 9 1/2 in. plastic sheets with projection range of 20, 30, 45, and 60 deg. Ellipse lines are 1/8 in. high, easy to use. Construction and use are pictured.



on negative side to prevent scoring, and smooth cut edges mean clean drawing. Resilient felt is included to stop and keep cut sheets clean. "Compliment" set also available singly.

Below Test Power Supply

Intended for use in testing of aircraft devices, large "Nebulon" power unit, designated E-35-518, constructed by **Sorenson & Co.**, 777 Fairfield Ave., Stamford, Conn. supplies 150 amp at 25v. dc. bettering accuracy 6 1/2% over 7 to 1 load range. Control circuit a modular in transformer, variable output, with modification to handle 15 kv input required of modified system. Electronic control circuit for extra unit, built on removable chassis which slides



into place on grid rail, will operate from either 115 or 440v. single phase. Control voltage is pulled up by leads connected at end to transformer for

last drops between regulator and load. Other features include auto voltage protective and external voltage adjustment via small potentiometer. Weight is 2,500 lb., dimensions are 24 in. high, 16 in. deep, 46 in. wide.

Seat Emphasizes Comfort

Designed to afford greater passenger convenience, new CAA-approved plane seat featuring table that locks in arm rest, back cushion lowering to 70-deg. reclining position, and legrest that can be used by one if desired by **Hudson Mfg. Co.**, South Can., Calif. Metal supports permanently attached to table fit in armrest slots to give steady surface for dining or writing and extend only to inside edge of seat so that passenger can easily reach back type seats. Table is stored in pocket in rear of chair shell. Leg rest and 70-deg. reclining back cushion add to comfort while sleeping or relaxing, and when draped at speed within 45 in. forward, foot rest retracts recline to 45 deg.



Cushions are available with either foam rubber or springs, and built-in headrest (on or pillow type) on back cushions are optional. All upholstery parts are removable for cleaning and replacement through use of zippers and zipper-close buttons. Legs are mounted near base to provide maximum aisle width.

Mobile Fire-Fighter

Specially designed as standby equipment for hangars and crash sites, new 40 gal. fire extinguishing engine, offered by **Walter Kiehl and Co.**, McElroy, N. J., is built for greater fire output with automatic suction controls. Equipped with dual head tank and motor mounted on double roller bearings, and will transfer data flow involving ordinary accessible car

tracks and flow 3 1/2 in. (flammable liquids). Metering control means solution in measured quantities, and automatically reduces output. Flow rate varies 75 ft. of 11 in. weighted chemical hose with shut-off discharge nozzle.

Tires for Jet Runways

Two new aircraft tires, one made by **B. F. Goodrich Co.**, the other by **Firestone Tire & Rubber Co.**, both of Akron, Ohio, feature ingenious construction of steel wire mesh embedded in tread to provide needed lateral traction on snowy or icy runways. Good-



rich tire (seen above) has rectangular cords (shown embedded in tread) and side bias. As for Firestone tire (bottom photo), it's stated that steel cords, each 3 in. long and of 1/4 in. dia. are carried in tread. Company says that there are about 5,000 of these tires in flight use.



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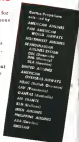
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Co., 3538 Oak Ave., Lake City, Minn., and its cutting range extends from light plastics like, wax, leather, and rubber to heavy grades of aluminum and steel. Nearly degree inches may be cut in single operations either at cross or longitudinal angles. The machine is portable in that it is weighing 400 lbs. and is capable of shearing of angles both smaller and greater than 90 deg., and many straight shearing operations are also performable. Flexible gaging arrangement allows width of any dimension to be cut. The machine is made in two sizes, one for 12 in. wide material and the other for 24 in. wide material. The machine is made in two sizes, one for 12 in. wide material and the other for 24 in. wide material. The machine is made in two sizes, one for 12 in. wide material and the other for 24 in. wide material.

Seals Aircraft Heater Controls

Developed by Jantrol Aircraft Heater Div., Surface Combustion Corp., Toledo 1, Ohio, the new sealed control containers for S.C. heaters are intended to facilitate installation, aid in standardizing maintenance procedures, and prevent leaks from leakage or failure of fuel tubing, support functioning of controls, etc. Applicable for heaters ranging from 100-600 to 700,000 Btu output, units are stated as also suitable for smaller heaters. Scavler fuel injectors, fuel filters, air-fuelled fuel mixers,



way regulator, and magnetic fuel flow valve, larger size includes two fuel pressure regulators. Engines can, may be

and with electrically operated ball joints use transmitter to provide direct indication of actual fuel pump pressure on instrument panel. Cover is sealed while inside installed, container is subjected to internal pressure test for leakage, and fuel control units or containers are also checked for leakage. Connectors and fuel inlet and outlet lines are chemically sealed where they pass through container shell. While regular operating voltages for containers are 24 dc, larger, and 12 dc smaller type, either solenoid or electrically actuated, and Containers are used as a backup for air conditioning system control and also as a sealed vessel.

Aircraft Tire Charges

Distributed by Air Associates, Totowa, N.J., are shop air muffers designed to remove and mount aircraft tires quickly, safely, and with little effort, and also minimize chance of damage to tires and wheels. Tires up to 36 in. can be handled on both direct-drive flange and drop-center wheels, and special attachments are available for over-



ing back up to 72 in. With device, two operators are stated as capable of securing an ascending large tree in 7 or 8 min.

Install the Software Terminal

Early spotted foot peca announced by Aircraft Marine Products Inc., 1572 N. 46th St., Harrisburg, Pa., is offered as



466 S. Robertson Blvd., Los Angeles 36, Calif., is intended to allow use of thin lightweight carbon in armor chest, eliminating need for metal supports. Material, stated to be resistant to heat, cold, and fire, is available in widths of 1, 14 and 2 in., and in thicknesses of .063, .090 and .125 in. Claimed ultimate tensile strength of 1,600 psi at 500% elongation. Hot-rolling process is intended to provide uniform strength, and no stratching or no twisting is used. Metal fittings can be made integral part of webbing.

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Suitable for manual parts cleaning, in aircraft component manufacturing and other shops, Equipment Div., Magnac Chemical Co., Greenwood, Mo., offers its redesigned Magnac Al-20 cleaning machine. This portable, electrically powered unit only 16 inches long and weighing 40 lb. features a heating and circulating fluid. Current applications include cleaning of engine and turbine parts, heat exchangers and valve train parts. The mechanism is located in front of machine for easy access and viewing. Positive heat cleaning is achieved through automatic raising and lowering of parts platform. Hot treatment through cleaning solution, hot drying during cleaning fluid, through all solvent phases of wet, wash, and dry are built into five periods of cycle. Available in 15 sizes and types for engine and building lbs. pounds of units to scrub to loading 2,500 lb.



be used with either cold or hot cleaning solutions, with heat by steam, electric, oil gun, or heat-gun.





Skilled mechanics at Mid-Continent Airlines use Snap-on tools to help them maintain the airline's rigid standard of excellence.

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AVIATION SALES & SERVICE



Chicago's Skymotive Inc. Sets New Pattern for Fixed Bases

Horneby and Cochran, World War II aces, bid for executive transport business from Orchard Airport.

By ALEXANDER McSWEENEY

Fixed base operations in the Chicago area have a new and formidable competitor in the 10 months-old Skymotive, Inc., exclusive operator of the big Chicago (Douglas) Orchard Airport, 20 Park Ridge, north of the city.

Two World War II Air Corps pilots, John L. (Jack) Horneby, president, and Phil Cochran, vice-president, came home from the war with new ideas about how to operate airport service, and set out to put on big a plant as they one of executive transport business in the nation's second largest city.

Operations Expanded—Since the Skymotive operation opened, less than a year ago (Feb. 1947) business has been growing steadily, and an expected annual output and not unreasonably. They now have 35 planes stored in their two hangars, and approximately 70 more customers besides planes in their operation. Two of their most polished customers have been Milton Reynolds, the Chicago post manufacturer, who used their base to prepare for 241 Olympic world-airworld A-36 flights, and Panzer Truck, Chicago auto dealer, who stocks his streamlined Buick two-engine cargo plane at Skymotive in between kept around the

company to exhibit the Tucker torpedo motor car prototype.

Horneby and Cochran have a five-year lease on the operation, and they paid "plenty" to the city for a building a cut on gasoline receipts, in addi-

tion to their aerial. They admit they run an expensive operation, with a total of 44 employees, who provide line service 24 hr. a day, and maintenance 16 hr. a day. Two station wagons and an airport truck are kept on call to load passengers and baggage between the airport and downtown Chicago, 35 minutes away. They operate a CAA-approved repair station, and recently have added the services of E. Burdick Keeley, former Beech structure engineer, an engineering consultant on major rebuild jobs of crashed aircraft.

►Fix-Old Began—They are concerned that the expenditures are beginning to pay off, in attracting a group of regular



SKYMOVOTE OFFERS COMPLETE SERVICE. Its present unit service of Skymotive, Inc., Douglas Airport, Chicago operation, are shown here in record's time. Line with customers with doors at hand, tools are selected, radio in checking special cleaning and maintenance services are arranged, baggage is loaded into special station wagon.

timist customers, who already begin to value their aspect a significant part of the business they want to engage. Corbin, who handles advertising, publicity and news information for the firm, spends a good deal of his time traveling outside personal contacts with firms using executive aircraft and their chief executives. Magazine, news coverage and other information is also being disseminated as to the Skymaster program.

But the more widespread is at the time, still from the moment the white, unfurnished, "cockpit" of the plane is at the time and guides the pilot to the proper berth on the flight box. A set of, which lets pilot's requirements, a program is used to the plane, with a carbon copy to the line, independent. Display and original are checked off before the plane is returned to its pilot. Meanwhile status, status, telephone, structural service, and even hotel reservations and theater tickets are possible, if the customer wants them.

Bech Design-Henrich points out that many airlines have using their own transport regularly, have limited the habit of using their own aircrafts along to more major out of the plane in transit. Skymaster maintenance and repair service is offered at a standard which would make this a necessity.

Skymaster is currently utilized a Bech dealer franchise one of two in the immediate Chicago area. The other franchise is at Peoria Airport Sales and Service at the small Peoria Airport, about seven miles from a Bech dealer. A Bech representative stationing himself at the Peoria before he received the franchise he had to serve for Bech in the Chicago distribution zone.

An experimental pilot service with a single Bech Beech plane Skymaster in five months has utilized the plane about 200 to at 525 in hours. Considerable more plane time could have been sold if additional equipment had been available. They hope to add more more Skymaster in the spring in this service at the second station at its present level.

Plans to Fly—"We are aware that the pilots who take the plane, and if there is any doubt in regard to a certain flight in addition to receive his certificate and log book. As a result we have had no accident record of our experience," Corbin points out.

There are a contract similar to those for auto rental and which operators tell him use of the plane for a day for their own flight for 157. If the plane is not used in within 200 miles of Chicago, and can't be Skymaster stands the owner of the plane but if he is beyond that zone it is considered the pilot's expense.

Another advantage is, says Skymaster is following in the "A" team

Ensign Sale

First commercial sale of an All-American Ensign, Douglas all-metal monoplane, has been made to Robert F. Wood, San Jose, Calif., dealer, who will use it as a demonstrator. Sales price on the basis was \$14,000 under \$15,000 although it may. Long Beach, Calif. factory price is \$13,495.

Sale was made on the basis of a temporary approval type certificate issued by the region Civil Aeronautics Administration office. Final A.T.C. is scheduled to be issued by CAA in Washington, D.C., approval of the design. All American has made no plans for production or marketing of the craft. Definite decision to confine these activities to a small scale has been made.

All American accepts a portion of the machine Douglas Aircraft Co. plant at Long Beach, Calif., the property of which has been leased by North American Aviation for its 44 jet bomber production.

James T. H. Rish, operator of Helicopter Air Service, Lehigh Valley Bell Helicopter at Skymaster. A Skymaster machine graduated from the Bell helicopter school shortly its construction and repair. Rish is one of the three remaining applicants for helicopter air mail routes in the Chicago area and will need at least six helicopters if he should win a route award. The plan is to contract to operate at Skymaster in that case.

Airport Problem—Owner of the airport (Chicago) largely on the dependence of Douglas Airport. In the event Air National Guard should combine its operations with the Naval Air Station at Glenview, Ill., as has been requested in the program of general consolidation of military and naval bases. The city of Chicago will fill her to the large hangars and maintenance areas the field from Skymaster, Henrich and Corbin have their heli in for least of two of the heli, because if the should be sold and have incentive plan for a more efficient operation. This is also interested in building on operation of the new northern island division Chicago National Air and Defense that the heli, working airport and the downtown area would make a highly efficient maintenance operation setup. Eventually they have hopes of establishing two other bases, one on the west coast and one in the east coast, but they expect that they can't more operating experience at Chicago.

A strong factor in favor of their operation is the airport itself, with 24 miles coastal tower, some 10,000, 6,000 ft. concrete runway, divided to take heavy four-engine aircraft on ILS in operation, and GCA facilities seem fine. All weather facilities are being given of the four engine aircraft scheduled planes of all types, cargo, freight, and business planes, in this aspect, and Skymaster's gate sales and line service are being being.

Piper Aerocraft Drop From Aircraft Council

Piper Aircraft Corp. and Aerocraft Aircraft Corp. withdrew in their paying members from the Federal Aircraft Council of the Aircraft Industries Association, at the recent meeting at Springfield, Ill. They will continue to send representatives as observers to meetings of the council, by vote of the other nonmember members. Economic reasons were understood to be the cause for both withdrawals.

Dwight L. Wallace, president of General Aircraft Company, Wichita, was elected chairman of the council, succeeding John Fredrickson, Aerocraft president, and William H. Kline, Jr., general sales manager, Service Division, Consolidated Vultee Aircraft Corp., Wayne, Mich., was elected vice chairman.

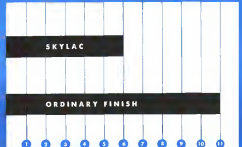
Wallace, 37-year-old graduate aeronautical engineer, has headed General since 1951 and is a member of Cyle General, member of the company. Under his leadership General was the Aero-Navy E. perished five innovative ideas for jet propulsion, principally of four-engine thrust and widely cargo planes. General is now a leading producer of personal jet plane and four place planes. General, manufactured approximately 7,000 general personal aircraft.

Joseph T. Gering, Jr. continues as manager for the council, and Don R. Mueller, as public relations director. Next meeting of the council is tentatively scheduled late in January at the Statler Hotel in Washington.

New Bell Dealer

Bell Aircraft Corp. has appointed AP Helicopters of Burbank, Cal., as its dealer in Southern California counties. Previously operating as Mustang, "Paul Helicopters Co." the new dealer organization since last spring has flown its two helicopters approximately 1,900 hours and currently is operating three more. 150 hours per month. Officers of the firm include H. L. Mustang, president; Keith W. Paul, general manager; A. L. Sandelbach, sales manager; and Paul Brown, chief pilot.

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| 1 | Coats with base coats. High-build primers, under more coats due to weather conditions. | 5 | Excellent looking, grows and gives with little shrinkage. |
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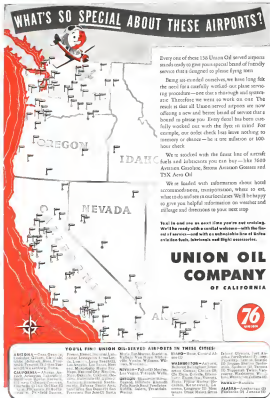
Because it covers in fewer coats, Skylac saves on labor and materials - cuts down "lay-up time" in the shop. Actual practice proves that in normal cold application, 5 or 6 coats of Skylac will provide a finished coating of 8 to 8 mils in thickness. Other finishes require many more coats to give the same thickness.

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[illegible]

ALB—Amherst (2) finishes 21, Juneau (10) wins 19.

Flint Demonstrates Landing Instrument

First public demonstration of a Fleet landing instrument, a bombing-type truck-down point indicator, was held at Anacapa by repeatedly bringing an Avenger Chief down to within 5 ft. of a ground marker from the start of the glide at 1,000 ft. The landings were made deadstick, by Tadde Moss and an Aviation Walk observer at Naval Air Station, San Diego.

Device was developed by Earl Flinn, former Wright Field engineer who developed the wartime low-level homing aid used by the Air Force. The device operates as a reflexless process by projecting an orange dot of light on a glass screen. After leading aircraft wind velocity, gliding speed and a phase post-weight into the system, the orange dot is projected on the screen at a position indicating the point on the ground ahead for touchdowns.

The tests were made by hoisting cloth strip 10 yds long and one yd wide in the middle of the field. The shuttle was cut at 1,000 ft with a band one-half mile tid wind. Cl speed indicated 65 mph and was already without velocity on reaching

The fishing instrument is new because manufactured exclusively by the American Cigar and Manufacturing Co., Dayton, Ohio. Priced at eight per cent off retail, it has been standardized. Assistant Chief and Cheapsong 5245, Laurence Schmitt 5275, Elcombe 5275, State Visiting and Station Wagon 5275, State public School 5425 and Beaches Business 5605. Residents have also been designed for Baltimore, Carroll County, Fish Market, Paper, Rock Salt and Water but prices have not yet been quoted. Visitors to parks accommodate special mounting fees are required for each wildlife type.

Alligator Reunion

Florida Flying Alligator Club (anational) will hold its postwar reunion and initiation at Melbourne, Fla., Jan. 2, 1948. This will be the fiftieth anniversary of the founding of the club, which now has over 1,000 members throughout the United States, possessions and Canada.

The living Alligator Industries appears before the show as advertised as one of 990 airplanes, larger private jetliners in the U.S. These parties are usually held at a prelude and usually point the pilots commit to it. Many All American Airline Accommodations for the 2,800 members and visitors expected for the meeting are being arranged by Vantage Airlines manager, Melbourne Airport, Melbourne, Florida.

BRIEFING FOR DEALERS AND DISTRIBUTORS

WEATHER STUDY—New Institute Underwriters, New York, City, hoped that it was only a premonition out of the ages who opined "everybody told about the weather but nobody does anything about it." Engineering department of AIEA is sealing out Institute reports pertaining to a huge task of pilots, to get back a complete report on weather forecasts with actual weather examinations, timeliness of weather forecasting is, from the subject of pilot reports for years, to the accuracy of the forecasts. AIEA proposes to analyze reports received from pilots and forward the tabulations to F. W. Reichlebach, chief of the U. S. Weather Bureau, for his information and action. Report card position given for pilot's notes, address, model plane down, descending surface, point of forecast, flight route, weather forecast correct, and actual weather examined. If a large number of reports are received from one station there might be some changes made in the forecasting at that locality.

GEMINI IMPORTS DISPLAYED—Imports of the two-engine four-place Gemini IIAs, Gemini planes to this country are being delayed pending study to learn exact costs of import duties, installation of the Continental 125 hp. engines expected to be used, and CAA airworthiness certification changes required. Smith Rotorcraft, Anniston, supplier for Miles aircraft has resumed factory delivery schedules as being studied to determine availability of planes for U.S. delivery.

MIXED REACTION TO POWER PLAN-A *Some citizens in a few towns who operate at the National Anticillio Cillios and NATA meeting in Springfield, Indiana, a mixed reaction to the National Fuel Services plan issued by Duke Power, Holston nuclear power plant. Meanwhile the plan is spreading rapidly in many cities in the east and middle west as well as in the west coast, and expects to be in full force by the end of the year. The plan is a result of a series of meetings and discussions with groups of operators. Operators not signing up for the plan say that the fuel price charged the consumers for the general school system plus eight hours of fuel restrictions quoted at \$275, is not the best with their resident could get at in hours of fuel restriction at most airports for the same reason. Proponents of the plan including some highly respected businessmen, operators feel that the rest of the plan may be justified because of the fact that the plan is meeting prospects which ordinarily would not come out to the street.*

SEINS OBSOLETE, SAYS BEVO—Probably the most telling line that was struck at the Springfield Clinic at the recent GAA private pilot flight night was that by not-informed Beverly Howard, NATA president, airport operator and flight instructor. She said that the FAA's new rule requiring pilots to follow delegates that the spec is obsolete, and that there is no reason for the measures in normal form. "Bevo" spoke in support of a Clinic bill calling for modification of flight requirements, which was passed without serious objection. The FAA's new rule, which requires pilots to follow delegates, is a "one-size-fits-all" rule that would be applied to all pilots, regardless of their level of experience. Howard said that the FAA's new rule is "outdated" and "out of touch" with the needs of the aviation community. She said that the FAA's new rule is "a step backward" and that it "will only serve to discourage people from flying." Howard said that she "will continue to fight" for the Clinic bill and that she "will not stop until the FAA's new rule is repealed."

OPERATORS WOULD PUT UNCERTIFICATED PLANES—El Cero, California, III. operative, and Howard, also school nurse consummate references in the Clinic, particularly in the CAA center where they informed the Clinic they would not hesitate to use uncertificated personal planes, if they were backed by established manufacturers. Their testimony was followed by that of Bill Kline, Stinson's manager, who asserted that if 11 new rotor aircraft \$3,000,000 in being out of production, the CAA would not be able to certify them. Kline's testimony on this project, is not going to be inquisitive about his product. Jerry Kline, insurance engineer, had previously indicated the danger of responsible manufacturers, and Fred Evans, Michigan semiconductor director, told the Clinic "It has taken years back to get the mid-size planes out of the business, let's not get them back."

The opinion point on this report was repeated the manufacturer's naturally as possible. The CAA's certification policy was seen more influential than anything else in this final meeting of the board. A revised bill prepared by T. B. Wright proposed that CAA allow manufacturers who preferred to obtain manufacturer's standards, to certify their own planes.

-ALEXANDER M. SUMPIY

FINANCIAL

Winter Focusing Airline Interest On CAB Mail Pay Determinations

Revised basis of compensation likely; Board's own surveys expected to be controlling factor in establishing uniform mail payment method.

The airlines eagerly await results of the coming winter months as two fronts—another and the Civil Aeronautics Board. A depletion of last year's advance operations could very well prove fatal for a number of carriers. However, the greatest interest will probably be directed at the CAB where applications for increases in mail compensation are pending.

CAB will determine the extent of coverage that may be extended to the carrier. Except for America and Northwest, every airline has applied for more mail pay. Within six to nine months, the Board probably will have acted on all of these cases, and some form of award will have been established in the Board's procedures on mail rate matters. The basis of mail payments in the carrier field will be revised along with the establishment of streamlined procedure.

► **Three Classes**—of proposals of rate making, the Board developed three rate classes among the airlines to recognize such basic differences as traffic density, length of haul, operational problems and other factors. The first group, America, Eastern, TWA and United, receives 45 cents a box mile. The second group, United C. & S. Pacific, National, Northeast, PCA and Western, around 60 cents a box mile and have already had extensive rate cuts, lower traffic densities and higher mail rates than the "top four." These two groups, before subsequent adjustments, were considered on a service rate providing compensation for transporting the mail versus a subsidy.

The third group, Colonial, Continental, Midcontinent and Northwest, was regarded as second carriers. Their non mail revenues are at such low levels as to preclude a profitable operation with substantial mail pay. Compensation for the group has been on a straight plane rate but without regard to the weight of mail carried. Of course recently the latter has increased substantially and has caused a great deal of concern.

► **Mail Pay Adjusted**—to help relieve

the financial pressure on a number of carriers early this year, the CAB adjusted the mail pay of three of the 50 cent rate line, C & S, PCA and Western, by reintroducing a minimum capacity factor starting at 750 lb. purchase rate. This newly introduced rate mail basis was not designed to meet an emergency condition. Post-war rate made for gradual reduction of

COMPENSATION, APPROXIMATE RATES
1939-1940 PER POUND AND MILE

| | Open | Mail | Open | Mail | Open | Mail |
|--------------|------|------|------|------|------|------|
| | Rate | Rate | Rate | Rate | Rate | Rate |
| American | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Continental | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Eastern | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Midcontinent | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Norfolk | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Northwest | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Southwest | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| TWA | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| United | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Western | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Source: CAB Administration Board
Notes: 1. Rates are per pound per mile.
2. Rates are subject to change.

the minimum capacity factor to 250 pounds by the summer or fall of next year.

► **Vital Factor**—As the accompanying table shows, mail pay remains a vital factor in earning profitable operations for the airlines. Operating losses for 1946 and the first six months of 1947 have been deflated along with the actual mail pay received. To these amounts have been compared the largest one need to wipe out existing operating

deficits. It can be seen that such expenditures are indeed substantial. Eastern, and National to a much lesser extent during 1946, are conspicuous in their complete independence of any mail compensation to assure profitable results. Despite the loss of about \$900,000 during the third quarter, Eastern continues to show the ability to operate profitably on a cumulative basis with out benefit of mail pay.

Another way of viewing the condition of the industry's earnings is to develop the period required to offset previous losses. The year 1946 was the best in the industry's history while 1946 is among the worst. Accordingly, at average mail earnings, mail rates for the 1947 level, it would take from four and a half to five and a half years, in a number of instances, to recoup 1946 losses. The actual periods on this basis would be as follows:

| | |
|--------------------|-------------|
| Chicago & Southern | 5 1/2 years |
| Colonial | 4 1/2 years |
| PCA | 5 1/2 years |
| TWA | 4 1/2 years |
| Western | 4 1/2 years |

The airlines would be interested for they have deficits accrued during the early periods of the year thus increasing the time required for a year's mail compensation.

► **CAB Service**—It is becoming increasingly evident that the airlines will be required to do more than file copies of these deficit reports with the CAB in order to obtain the desired increase in mail pay. The Board may feel that the airlines have been disinclined to develop independent investigations per month of the mail losses. What the Board granted temporary relief for increases in mail pay for the winter, but this view, it indicated an investigation of each company involved. The line was required to file with the Board a self-analysis of mail patterns, cost and other conditions, operating and management practices and other vital factors. In summarizing the four reports submitted last fall, the Board stressed their "self-wasting documents." It is a fact known that the Board's own findings and its view will be quite substantial and will be used in controlling the final and determinations.

The extent of mail pay increases rounded the separate carriers and the relative picture established will be of great importance in the industry's development. Very much enhanced will be the level of passenger fares and cargo rates. Of increasing importance is the rate of general utility bill and water rates. Once this is worked out and one year is on the way, it will be possible for the Board to criticize upon a much needed financing program to require new and efficient equipment of all types.

Selig Abraham

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Jungle Rescue...



Packet-locks after teams which will provide a rescue service for any spot on earth are one of the goals of the Air Force.

The need was dramatically demonstrated recently when the Air Rescue Service of the Air Transport Command transported helicopters in Fairchild's Flying Beavers to the jungles of Nicaragua. Crew members of a Flying Fortress last in the almost impassable jungle were located and transported to safety in six efficient hours.

The C-82 Packet, with its huge unobstructed cargo capacity and its range can also serve the nation in peacetime as a fast, versatile "plane of mercy", flying in and out of short airstrips wherever the emergency needs of floods, hurricanes and other disasters require. Together with a helicopter which can jump like a hummingbird into even impassable terrain, they make an unshakable team that offers welcome protection to civil and military aviators all over the world.

Fairchild Aircraft

Division of Fairchild Engine & Airplane Corporation, Hagerstown, Maryland

Domestic Trunklines to Show Record Losses For Second Year

Operating deficit for nine months is \$10,593,368 as passenger traffic falls under expectations; carriers pressing for mail pay relief.

With traffic far below expectations during the first nine months and last quarter operations certain to be affected severely by the D.C. grounding, the 16 domestic trunklines are heading for record deficits for the second straight year.

Present indications are that last year's operating loss of about \$3,500,000 will be at least doubled and possibly tripled this year. The domestic carrier operating deficit during the first nine months of 1947 was \$10,593,368, compared with a \$4,644,785 operating profit in the same 1946 period.

Three lines show profit—On Sept. 30 of this year, 13 of the 16 domestic trunklines were in the red, the only exceptions being Eastern Air Lines with a \$1,972,389 operating profit, Gulf Air Lines with a \$134,938 profit, and Mid-Continent Airlines \$202,914 in the black. Carriers with losses of more than \$1,000,000 include American, \$1,190,360; PCA, \$2,018,380; TWA, \$3,115,844 and United \$2,623,703.

One of this year's heaviest carrier deficits will depend almost entirely on November and December results. Many carriers to report for October showed losses—Republic, Chicago & Southern, Mid-Continent and PCA—with profits and Eastern with a slight loss. United and American expect to have profits in October, while National predicts a deficit.

Mail Pay Relief—The domestic trunklines' big hope for relief from operating deficits lies in their swelling petitions for more mail pay. Only American and Northwest are not seeking higher mail rates. Contractual restraints accepted a retroactive mail pay details passed to its last carrier (Aviation Week, Nov. 24) and as a result is expected to show a profit in 1947.

A 10 percent fare increase instituted by Northwest Airlines in October and slated to go in effect on Jan. 1 of all six other trunkline systems before Christmas will have little bearing on 1947 earnings. TWA, United, PCA,

Western, Island, Chicago & Southern, Delta, Mid-Continent and Brazil are the other trunklines experimenting with the new 5.5 cents a mile passenger fare.

Traffic Gains South—Revenue passenger miles during the first three quarters of 1947 totaled 4,584,596,500 against 4,850,307,000 in the same 1946 period. The gain of less than five percent contrasts sharply with industry expectations of a 25-30 percent passenger traffic increase.

Among the heaviest carriers, American, Eastern and United showed passenger traffic gains over 1946, while Northwest, PCA and TWA reported declines.

International Operations—U. S. flag carriers as a group made slightly better returns in the first nine months of 1947 than the domestic lines. American Overseas Airlines had a \$1,145,746 operating loss to Sept. 30. TWA's international division had a \$525,767 operating deficit, and Northwest's service to Alaska and the Coast was \$189,937 in the red.

By contrast, Pan American Airways had a consolidated net operating income of \$3,569,348 for the same period. This included a \$2,185,000 profit on

African services, \$1,127,680 profit on Pacific services, \$781,080 profit on Atlantic services and a \$664,000 loss on the Latin American division. In the same 1946 period, PAA had consolidated operating profit of \$1,653,000, and all four divisions were in the black.

CAB Action Holds—Profit on PAA's Atlantic division will be increased sharply, and deficit suffered by TWA's international division and American Overseas Airlines during the first nine months of this year will be decreased or wiped out altogether as the result of recent CAB action. The board last month gave the three carriers an aggregate of \$6,585,081 in additional mail pay for trans-Atlantic services performed between Jan. 1, 1946, and June 30, 1947.

Freight operations also have benefited noticeably from recent CAB mail pay decisions. Pioneer Air Lines, whose mail pay is now linked directly to its local hauler, reported \$111,673 operating profit in the first nine months of 1947.

Frederic Foxmala, Set-A-CAB order in October boosted the mail pay of its local carriers—Empire, Monarch, Southwestern, West Coast, Florida and Gulf—length—less 15 cents a plane mile to 60 cents a plane mile for approximately the first six months of their respective services. The rate drops to 55 cents a plane mile during the succeeding three months and declines 5 cents more each three-month period. Thereby, it will offset about 18 months after inauguration of service each carrier's mail pay increases 15 cents a mile.

As a result of the formula, West Coast Airlines, which had an \$36,900

Domestic Airline Revenue and Traffic

First Nine Months of 1947 & 1946

(Scheduled Passenger Miles)

| Carrier | 1947 | 1946 | Revenue Passenger Miles* | 1947 | 1946 |
|--------------------|-----------------|----------------|--------------------------|----------------|----------------|
| American | 1,211,349,000** | 1,144,111,000 | 1,800,000,000 | 1,100,000,000 | 1,100,000,000 |
| Boeing | 1,042,740,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Chicago & Southern | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Continental | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Eastern | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Delta | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Northwest | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Mid-Continent | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Republic | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Southwestern | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| TWA | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| United | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Western | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 | 1,000,000,000 |
| Total | 12,125,000,000 | 11,441,111,000 | 18,000,000,000 | 17,000,000,000 | 17,000,000,000 |

* By air only; ** By air and water only

* By air only; ** By air and water only

loss on June 30, reported a \$15,473 profit for the nine months ended Sept. 30. March Air Line, which had a \$153,939 operating loss on Sept. 30, received \$182,649 in back mail pay on Oct. 30.

Deficits: Cal-Empire Air Lines, \$116,300 in the nine months ended Sept. 30, was able to reduce its deficit to \$100,000 on Sept. 30. Back mail pay for Florida Airways' June 30 deficit of \$118,000 to \$17,000 on Sept. 30 and dropped Challenger Airlines' June 30 deficit of \$68,093 to \$35,930 on Sept. 30. By contrast, the deficit of Southwest Air-

ways, which had not yet figured in its back mail pay, climbed from \$444,000 on June 30 to a total of \$611,990 on Sept. 30.

London still depends on mail pay for the major part of its revenue. During the nine months ended Sept. 30, Pioneer's total revenue aggregated \$772,800 and its passenger revenue \$541,300. Florida Airways mail revenue in the same period was \$277,000 and its passenger revenue \$211,933. On the fast-rising Transair, passenger revenue this year has exceeded mail revenue by as much as 50 to 1.

Damon Estimates Equipment Market

AA president sees transport orders totaling \$100,000,000 annually.

U. S. air carrier, both domestic and international, probably will be in the market for between \$200,000,000 and \$125,000,000 worth of commercial transport annually during the next five years in the opinion of Ralph S. Damon, president of American Airlines.

Testifying before the President's Air Policy Commission, Damon estimated that as of Jan. 1, 1948, U. S. commercial airlines will have about \$139,000,000 worth of flying equipment on order and underway. Annual plane orders totaling \$278,000,000 and \$490,000,000 will be ordered for delivery in the mid 1952, according to Damon, making total commercial plane purchases for the 1948-1952 period of over \$220,000,000 to \$742,000,000.

Damon noted—also emphasized—that his studies were based on many assumptions regarding the country's economic health during the period up to Dec. 31, 1947. The growth of passenger airline business and freight, and the ability of the carrier to finance or obtain credit for new equipment. The American Airlines executive also pointed out that commercial business during the next five years will not contribute as even less "robust impetus of postwar boom."

Damon said the \$100,000,000 to \$125,000,000 net in business he expected annually by the airlines could be deducted from the total of \$720,000,000 in yearly orders which will be necessary to keep the U. S. aircraft manufacturing industry at the level the Policy Commission said the U. S., in the interest of national defense, should not permit major airline plants—now producing 14- to 15-to be reduced below ten.

Needs listed: To remain solvent and do a reasonable amount of development work, each of these 10 aircraft companies should have orders of at least \$100,000,000 annually, including both military and commercial business, according to Damon. Firms engaged in the manufacture of engines, accessories, propellers, instruments and other parts also should have annual orders aggregating \$100,000,000, he declared.

Expense to the government of administering contracts and financing aviation laboratories or agencies probably will cost another \$120,000,000 to \$150,000,000 annually. Damon estimated, bringing to \$720,000,000 the total sum necessary to support the aircraft manufacturing industry each year.

CAB Probes Alaskan Mishaps

Board proposes exemption for Alcasgo lines flying to U. S. in territory.

Two fatal accidents involving Alaska Airlines and a CAB proposal to grant exemptions to all cargo lines operating between continental U. S. and Alaska focused attention on the board's air transportation picture early this month.

CAB inspectors are investigating recent crashes involving an Alaska Airlines DC-4 at Santa Teresa, Alaska and Argent and a Columbia Air Cargo DC-3 at Yakutat, Alaska. Airlines is certificated within Alaska and operates under scheduled and charter to the U. S. while Columbia Air Cargo based at Portland, Ore., is uncertificated and provides contract and unscheduled service from the Pacific Northwest to Alaska.

Cont. Action—Last month, Alaska Airlines was accused by Pacific Northwest Airlines, Anchorage, of operating an schedule between Alaska and Seattle in violation of the Civil Aeronautics Act (Aeronautics Act, Nov. 17). The complaint is still pending in Alaska Federal Court.

Immediately following the Alaska Airlines accident, CAB cited the company for opening scheduled commercial service between Alaska and the U. S. contrary to provisions of the Civil Aeronautics Act. The company by Dec. 15 must show cause why it should not be ordered to cease and desist from transporting persons between points not on its certificate of route. (CAB had proposed the order prior to the accident).

Overhaul—Meanwhile, the Alaska Airlines DC-4 crashed the runway at Seattle-Tacoma Airport and rolled into an automobile on an adjacent highway, where it burned. Five passengers and the bodies were killed along with crew occupants of the automobile. Twenty-five persons aboard the plane were injured.

Initial loss: Anchorage to Seattle, the DC-4 pilot had previously made attempts to land at Boeing Field, Seattle, and Prince Field, Everett, Wash., but was unsuccessful because of bad weather. The accident was the first involving an Alaska Airlines transport since the company's inception over 30 years ago.

Scheduled Mailup—All 11 passengers and the two men crew of the Columbia Air Cargo DC-3 were killed on the Yakutat mishap. The flight had originated in Anchorage and was bound for Seattle and Portland. The crash occurred during a night approach to the Yakutat Airport.

Meanwhile, CAB has taken steps to investigate a new action 2927 of the Economic Stabilization Board which would grant all-cargo operators on the Alaskan run the same privileges as passenger airlines obtained under section 2927 during the post war months by 11 other companies. (Pacific Oceanic Airlines, Denver, Colo., last month became the 11th carrier to receive a letter of authorization under 2927, and Transair-Hawes, Honolulu, apparently will receive a letter shortly).

More Service Needed—None of the operators on the Alaskan run has been able to qualify for a letter under 2927. In proposing section 2927, CAB observed that there is need for a greater volume of air cargo transportation between continental U. S. and Alaska, adding that companies currently are "unable for this service (Two American and Northwest) apparently are unable to satisfy the demand."

Terms of certificated carriers have been based on a scheduled or charter basis between the Pacific Northwest and Alaska in the past few years, their numbers reaching record proportions during recent shipping strikes. CAB now plans to permit these companies to conduct scheduled common carrier freight service pending determination of the application for certification of public convenience and necessity under 2927. Operators must file within 18 days after the new regulation is promulgated.

Flexible Carriers—The exemption would extend to two groups of airlines: (1) all airlines whose routes are held certificates to operate within the territory, and all other authorized carriers, certificated or uncertificated which operated at least one round trip between continental U. S. and Alaska during the season from Aug. 1, 1947, to Dec. 31, 1947.

Since of the carriers certificated within Alaska (such as Alaska Airlines) currently operate regularly scheduled passenger and cargo flights in the U. S., the net of the companies which now qualify under section 2927 have operated unscheduled or under contract with both passenger and freight.

Provisions: Given—Service operated under 2927 would be limited to that needed between points specified in the carrier's application for a certificate. If and when the certificate application of an individual company is denied, the exemption privilege for that carrier under 2927 also will cease.

A certificated carrier takes advantage of the exemption would be required to have records in such a manner that the cost and revenue of the air cargo service may readily be

ascertained in a rapid rate proceeding. Any carrier electing to take advantage of the proposed regulation must release for night to any passenger between points in the cargo service.

Possible Push—The latter provision will pose a serious problem inasmuch as the great bulk of cargo business between the U. S. and Alaska is north-bound. To break even, most of the operators have listed it necessary to carry passengers at least one way.

Red Influence Seen

In Communications Union

Changes of Communist influence in the CIO's American Communications Association flared up last week when Robert I. Abel, chief radio operator for Capital Airlines (PCA), accused the union of "Soviet influence in the Communist party line."

Abel made the charge in replying as chairman of last 801, Air Line Carriers' management Employees' Assn., which is affiliated with ACAA. In a letter to Joseph P. Schy, ACAA president, he said: "The charge that ACAA is a Communist organization has been too resistant to be forever ignored."

A spokesman for the ACAA, which department and had about 150 members had petitioned for Abel's removal and that the Communist issue has nothing to do with his resignation.



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SARO TRANSPORT MAKES FIRST FLIGHT

Longest British freight liner, the Short Sea Starliner, takes its maiden flight. Over 100 ft long, 28 ft high, it has a load capacity of 1,000 tons and a speed of 184 mph. It is the largest cargo ship ever built. The ship is owned by the Short Brothers and is being used for the transport of cargo. It is expected to be in service by the end of the year.

Harriman Sees Need For Cargo Growth

A plea for quick development of the air cargo field and a call for Commerce Department participation in molding the domestic airline route pattern has been voiced by Secretary of Commerce W. Averell Harriman.

Harriman told the President's Air Policy Commission that full development of air cargo potential offers the greatest possible air advantage for the full benefits of aviation in its broadest sense. These benefits, he said, include expansion and ultimate self-sufficiency of the air transportation system, national standards and support of the national manufacturing industry and the general increase in business tempo to a whole which comes with better transportation.

Harriman said the President's Air Policy Commission should call for a government responsibility to finance the development of new transport planes, both passenger and cargo. He recommended that funds for research and development of new types of commercial planes be handled under the general direction of the Commerce Department. Design requirements would be suggested by a representative of the air conditioning committee in cooperation with representatives of the aviation industry.

The latest is a report of building activities which is concerned entirely to

ICAO Fails to Draft Multilateral Pact

Attempts to draft a multilateral civil aviation agreement at the 29th annual conference of the International Civil Aviation Organization in Geneva, Switzerland, have broken down, and Canadian North, chairman of the U.S. delegation, and the executive committee for the abandoned work are a part.

The Geneva conference split over the question of "fifth freedom" traffic (the right of an airline to carry passengers between two countries other than its own nation). Great Britain, the U.S., the Netherlands, France, Sweden and several other nations declared their votes unwilling to accept plans for "fifth freedom" rights.

Voting for a Mexican aviation agreement, "fifth freedom" privileges were Australia, Canada, Colombia, Egypt, Portugal, Venezuela, Turkey, New Zealand, Mexico, Italy, Italy, Greece and Brazil. Canadian North of the U.S. delegation suggested that the matter of a multilateral civil aviation agreement be shelved while the nations give more substantial experience.

Airfreighters, Truckers Plan Service Pattern

Representatives of the Independent Airfreight Association and the American Trucking Association have agreed to cooperate in the interchange of air cargo with surface motor carriers. The two groups plan to develop a pattern of package delivery with local drop-off centers which will permit the air cargo lines to collect their services in precisely all parts of the U. S.

ATA also announced that Western Air Transport, Teterboro, N. J., and the commercial air cargo division of Leach Air Service, Hartford, Conn., have been admitted to the association.

Penalty Abandoned

The 25 percent penalty on "no show" passengers who fail to cancel their tickets before flight time has been abandoned by most of the commercial carriers. The law was adopted by the industry in October, 1946.

American Airlines discontinued the penalty last April, while Republic, Challenge, Northwest, TWA, Southwest and TWA's Midwest unit in November. Mid-Coast next, United, Western and Inland plan to remove the penalty this month.

PACA Names Marchionni To Head Committee

Clair Marchionni, general counsel of Capital Airlines (PACA), has been elected chairman of the executive committee of the carrier's board of directors.

In his new position, Marchionni will be actively associated with Capital's President James H. McCormack in the administrative functions of the company. First elected to the board of directors in October, Marchionni will continue to act as general counsel.

Order personnel developments.

Marchionni (Chicago) is also a well-known international figure who represents in New York and was involved in the development of business firm international relations.

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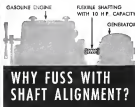


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Santa Fe Skyway, Inc., and its parent company, Atchafson, Tapes and Santa Fe Railroad, have been charged with operating in violation of the Civil Aeronautics Act by flying Taper Lone and California Eastern Airway.

The two independent shipping lines, which last summer became common carriers under Section 1823 of CAB's Economic Regulations, have asked the U.S. District Court in Los Angeles to restrain Santa Fe from further violations. They allege that Santa Fe is operating as a common carrier without legal authority and that contracts agreed with shippers are a blind to prevent the railroad subsidiary to fly regular schedules in direct competition with all-cargo line Skywest owned by CAB.

Santa Fe's application to operate as a common carrier under Section 292.5 is still pending before GAB. The company has transcontinentally with DC-6 and DC-1; and states it is a contract carrier.

An intensive simplification of the certification procedure for aircraft materials, parts, processes and appliances has been announced by the Civil Aviation Authority (CAA). Previous regulations have required the submission of detailed data on each appliance including modification and construction and approval by the Administrator of Civil Aircrafts. This process has proved complex and time taking.

Newspapers request only that the manufacturer certify that his appliance conforms with a "technical standard order" issued to cover the particular type of article being manufactured. The new policy affects Parts 33, 34A, 34B and 36 as follows:

"Materials, parts, processes and appliances shall be approved upon a basis and in a manner known heretofore by the Administrator to implement the pertinent provisions of the Civil Air Regulations. The Administrator may, in his discretion, require the applicant to furnish testimony to substantiate the validity and shall incorporate therein such portions of the statute, orders, federal and military specifications or existing such materials, parts, processes and appliances as he finds appropriate. Any material, part, process or appliance shall be deemed to have met the requirements for approval when it meets the pertinent specifications adopted by the Administrator and the manufacturer so certified by the answers provided by the Administrator."



| | |
|---------------------|-----------------|
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A Sound Air Program

The U. S. Air Force's proposal of 70 groups totaling 6,899 aircraft, backed by a reserve of 3,372 active reserve and 2,128 storage planes in a sound program for rebuilding American military air power.

This program has been an Air Force goal for nearly two years and the fact that Secretary Stimson and Gen. Vandenberg revealed it in such detail at a public Air Policy Commission hearing is an indication of the urgency of the situation.

Obviously they feel that the need for restoring the public to the security of this program outweighs the usual caution exercised for security purposes.

Considerable evidence of post-war thought is apparent. We are not following the French into the pitfall of building an air force for the next war to meet strategic and tactical demands of the last one.

The annual production rate of 3,200 planes a year, with an annual shift of planes from first line to reserve, then to the scrap heap, raises a question as to the average plane will be in first line service only five years.

Mr. Stimson points out significantly that there is

an need for safety for the aircraft industry, since Air Force expansion needs are more than the industry has indicated it needs to rise alive and healthy.

This program will be expensive. But it will cost no more than universal military training which, in the words of the War Department's chief propagandist, Lt. Gen. Raymond McLane, will cost us 20 years produce a single division ready for combat.

Money spent on the 70-group Air Force is financing a national life insurance policy. Rebuilding U. S. air power must have top priority in our national defense scheme. With this program we have the assurance of Mr. Stimson that we can produce a professional Air Force second to none in less than five years.

It has been said before on this page that since long before World War II the Congress has lagged behind the demands of the people for a powerful Air Force. In recent months there has been a stronger tide of public opinion for rebuilding our air power. It is unreasonable that the Congress can ignore any longer the strong will of the people.

Crepe Hangers & Lightplanes

Professional crepe hangers to the contrary, the personal plane industry will wind up 1947 with a total business—such as well as in dollars—more than 100 percent greater than its best previous year.

Although this sales record of about 16,500 units will fall short of many prognostications, we cannot forget that fantastic predictions of millions of post-war flying thrives did not originate with the personal aircraft industry.

We recall, for example, that several popular national magazines made "hurry" of the potential market, and came up with statistics out of line with the facts. Even the widely quoted predictions of former Commerce Air Secretary William A. M. Barker and CAA Administrator P. W. Wright were never matched by reality.

This is true, such is the development of a sound industry in the aspect of personal flying. Private and business aviation prices and production have shown a steady

and aircraft in the general conduct of their business or personal affairs.

Sales of aircraft to responsible youngsters, regardless of their flying enthusiasm, no longer constitutes the industry's market. This is all to the good.

This week Duane L. Wallace, Council's president and newly-elected chairman of the Personal Aircraft Council, will meet in Wichita to lay out the Council's program for 1948. The industry is fortunate in having Wallace as their leader and spokesman in the coming year. Young-thirty-five—and capable, an experienced engineer and executive, he has headed Comco for the past 15 years. The company has enjoyed continued blacklined financial statements.

With his leadership and an earnest effort by the industry to produce more efficient aircraft in line with the newest research findings, the Personal Aircraft Council represents the logical spearhead of a sound campaign for the substantial, sensible growth of personal aircraft usage.

ROBERT H. WOOD

The plane...

MEYERS "MAC 125"

This 2-place side-by-side low wing cantilever monoplane of all-metal construction is designed for the private pilot who must get in and out of comparatively small airports and still have at his disposal sufficient cruising speed to make good time cross-country. Cabin windows and windshield of "Lucite" acrylic resin provide a excellent views.



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In interesting numbers, the designers of the new planes are recognizing and using

the advantages of Du Pont "Lucite." It provides the initial economy and lasting performance that is so important to the plane manufacturer.

Write for free manual on "Lucite" for aircraft designers, engineers, maintenance men and owners: E. I. du Pont de Nemours & Co. (Inc.), Plastics Dept., Room 2232, Arlington, New Jersey.

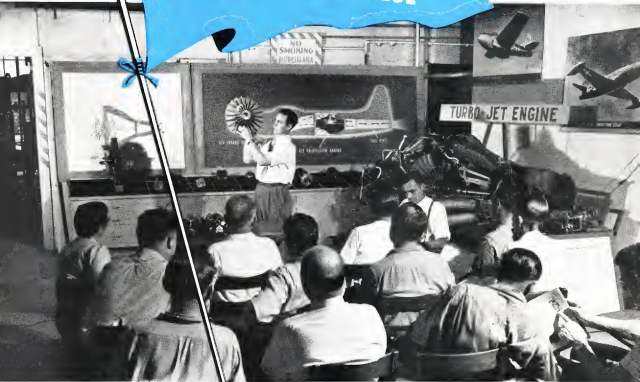
FOR VISION—"LUCITE" transmits over 92% of light rays. Can be formed in one piece, shattering shrapnel and blind spots.

FOR SERVICE—"LUCITE" stands up to the weather, hot or cold. Does not warp, in normal service, lasts for the life of the plane. "Lucite" is shatter-resistant, light in weight. Has good dimensional stability; resists vibrations.

FOR INSTALLATION—"LUCITE" is easy to install and easy to fix. It costs even less, in material and greater thickness, than other plastics sometimes used.

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"HOT-AIR" COLLEGE



Here, teacher demonstrates a compressor wheel at General Electric's Aircraft Gas Turbine Training school. Dubbed "Fort Knox" by visiting RAF personnel—when they saw the test pit's 14-inch concrete walls and steel doors—this school has, to date, "graduated" more than 250 CAA and Wright Field personnel. It will probably run for two more years to teach the function, operation, and servicing of jet engines to military personnel and others.

Five courses are conducted—running from three weeks to three days—on all phases of jet-engine operation. Pupils attend lectures and demonstrations, tour the factory, run engines, tear them apart, and rebuild them. As new developments come along, these are incorporated in the courses. Pupils are assured of receiving the most practical training for their phase of gas-turbine operation available anywhere in the country today.

You, too, can be assured of experienced help whenever you contact a G-E aircraft equipment specialist. We are constantly developing and manufacturing all types of electrical equipment for planes—from motors and control to instruments, lamps, and specialized lightweight systems. The nearest G-E office will gladly put you in touch with our application engineers. *Aviation Divisions, Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*



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AND
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